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INVESTIGATION OF CONCENTRATION OF ECONOMIC POWER

TEMPORARY NATIONAL ECONOMIC COMMITTEE

A STUDY MADE UNDER THE AUSPICES OF THE BUREAU
OF LABOR STATISTICS FOR THE TEMPORARY NATIONAL
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FINANCIAL CONTROL OVER, PRODUCTION AND
DISTRIBUTION OF GOODS AND SERVICES

MONOGRAPH No. 1-3 PRICE BEHAVIOR AND BUSINESS POLICY

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MONOGRAPH No. 1

PRICE BEHAVIOR AND BUSINESS POLICY

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(Signed) JOSEPH C. O'MAHONEY,
Chairman, Temporary National Economic Committee.

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LETTER OF TRANSMITTAL

U. S. DEPARTMENT OF LABOR,
BUREAU OF LABOR STATISTICS,
Washington, June 20, 1940.

Hon. JOSEPH C. O'MAHONEY,
*Chairman, Temporary National Economic Committee,
United States Senate, Washington, D. C.*

MY DEAR SENATOR: I wish to submit for the record this study of Price Behavior and Business Policy, which has been prepared by the staff of the Bureau of Labor Statistics for the Temporary National Economic Committee. It is intended primarily as a background for the deliberations of the Committee on matters where prices are involved. Most of the report was written when our attention was focused on peacetime conditions. Although it considers price problems in a peacetime economy, it provides several guideposts for legislative policy—guideposts which, it should be noted, are equally applicable in the midst of mobilizing our resources for a great defense program or even in wartime.

It is a major objective of our national policy to keep the American economy on as even a keel as possible in order to sustain production and employment. In attaining this objective, whether in peacetime or in wartime, prices play an all-important role as a kind of economic governor, like the governor on an engine. If any change is made in the governor, it affects the operation of the engine—it may speed it up, slow it down, or interfere in a variety of ways with its efficient operation.

This report illustrates, first, the variety of outside forces which affect this governor of the economic system, because of the great variety of market situations which confront American business and the many different ways in which changes in prices affect the internal operations of industry—in particular, production and employment. This analysis suggests the following guides to policy:

If any action is taken to influence or, more important, to regulate prices, any such action, to be successful, must allow a wide degree of flexibility and permit variation between industries and between products. It is dangerous to assume that a single price policy can have universal application. It clearly cannot.

Further, any agency charged with influencing or regulating prices cannot confine its attention to prices alone, since prices are an integral part of the industrial mechanism. Responsibility for marketing, for production, and for employment is implied in responsibility for prices.

This study also suggests that industry can accomplish a great deal toward conscious improvement of its operations by direct and unbiased analysis of its price and marketing problems. Some of the broad pricing problems confronting business are illustrated by the

recent history of a number of industries manufacturing electrical household equipment which, after a phenomenal expansion during the last 15 years, appeared in 1939 to have reached a point of near-saturation of their markets in the upper and middle income groups. They may follow one of two courses: Reduce prices and thus enlarge their markets in the lower income groups, or gear production largely for replacement and assume that families with low incomes will rely on the used-model market. Recent (1940) developments in the electrical refrigerator industry suggest that if less expensive models are introduced and sales of those models are pushed, the market will broaden and the volume of production and employment can be maintained or increased.

Another major objective of our national policy is to maintain and increase America's standard of living. To do this requires not only the smooth functioning of production but also the steady flow of goods to the ultimate consumer, at prices at which they can be sold in volume. Here, again, the level of retail prices is the key to the situation. Prices, in their turn, are influenced by the nature of retail markets and the margin which distributors require. Attention in the field of prices has hitherto been limited largely to wholesale prices. In our opinion, insufficient attention has been given to retail prices paid by the ultimate consumer.

This report indicates that there are certain important rigidities in retail prices, which prevent them from being reduced freely, and to which this Committee may well direct its attention. I refer to the so-called fair-trade laws which have been enacted by 44 States and to the Miller-Tydings Enabling Act which legalizes resale price maintenance contracts in interstate commerce. I refer also to the Unfair Practices Acts which are on the statute books of about half the States and which, while purporting merely to prohibit sales below cost, seem to lend themselves to highly restrictive activities. Further, in some lines of trade, particularly certain drugs, there appear to be unduly wide margins between the cost of ingredients, the sale price at wholesale, and the price to the consumer.

This report shows that in recent years, both in wholesale and retail markets, businessmen have more and more preferred to base sales appeal on factors other than price, such as quality, style, appearance, advertising, brand names, and trade-marks. This trend limits still further the effectiveness of any form of regulation dealing with prices directly. At the same time, it makes it imperative that the consumer should be given every opportunity to know exactly what it is that he is buying; that he should be afforded every facility to learn what a can of food contains or what fabric has gone into a garment. Consumer education and clearer standards for consumers' goods are important in order that the American public may be put in a position to expend its purchasing power wisely, an end which is desirable both from the point of view of the standard of living of the people and the maximum employment of men and materials.

This report consists of three parts. Part I is a general description of various aspects of business price policy and of their consequences to the economy. Part II is a detailed description of one phase of business price policy; namely, geographic price structures, such as basing point systems, zoning systems, and the like. Part III is a

discussion of retail prices with concrete analysis of distributive margins in the drug industry.

Much of the information upon which this report is based was compiled from published and unpublished data in the files of the Bureau of Labor Statistics. In addition, extensive information was available in various publications, including those prepared by other Government agencies. The study of the electrical equipment industries is based largely on a field survey by representatives of the Bureau and was made possible by the cooperation of leading manufacturers and distributors.

These studies of prices were prepared under the general direction of Aryness Joy, assistant to the Commissioner of Labor Statistics and director of Temporary National Economic Committee Studies for the Bureau. Edward S. Mason, professor of economics at Harvard University, has served as economic consultant in their planning. This monograph was written by Saul Nelson and Walter G. Keim, with the assistance of Laura Mae Brown, John M. Blair, and William C. French, Jr.

There follows, for the convenience of the Committee, three brief but somewhat more extensive summaries describing the matters dealt with in parts I, II, and III, respectively.

Respectfully submitted.

ISADOR LUBIN,
Commissioner of Labor Statistics

SUMMARY

PART I—PRICE BEHAVIOR AND BUSINESS POLICY

Part I of this report on *Price Behavior and Business Policy* is concerned broadly with the way in which the policy decisions of businessmen in the field of price affect the functioning of the economy. It was not primarily designed to present specific legislative recommendations but rather to present factual background and to serve as a guide to policy. It is evident from the analysis that no simple single approach to prices as such will solve the problem of increasing and maintaining industrial activity. The problem is far too complex.

Part I is concerned with two fundamental issues. The first is the problem of price flexibility, which arises from the tendency of the prices of some commodities, notably farm products, to fluctuate far more freely and frequently than the prices of others. The effect of these discrepancies upon the course of business activity and employment has been a subject of much controversy. The second concerns the efforts of businessmen to direct competitive effort into channels other than price, a trend which has had important effects upon the economy. Following the general discussion of these issues, market trends in some of the electrical household equipment industries are appraised as affording concrete illustrations of many of the policy problems confronting business concerns and the economic implications of their decisions. Part I also includes three appendices, largely statistical in content, bearing upon the same issues.

The body of the report consists of the following four chapters:

Chapter I. Price Behavior and Business Policy.—In the everyday conduct of their affairs, businessmen are constantly required to make decisions regarding their sales policies; that is to determine the character and variety of the goods which they are to produce, the price and other terms and conditions under which the goods are to be offered for sale, and the type of sales appeal which can most effectively be used in finding a market. These decisions in the aggregate have a far-reaching effect upon the national economy.

Commodity prices are to varying degrees influenced by day-to-day decisions of this kind. The prices of most farm products and of some industrial commodities are arrived at in markets where so many buyers and sellers operate that no one buyer or seller has any appreciable influence on the resulting price. In the case of most manufactured goods and some raw materials, the situation is quite different. The manufacturer of steel, of automobiles, of corn flakes or of proprietary drugs, for example, has a very real voice in deciding the price at which he will sell. No concern has unlimited latitude in determining price policy; even a monopolist must reckon with the competition of substitute products. In general, the amount of discretion available to any business concern in setting prices depends upon many factors, such as the nature of its product, the availability of satisfactory

substitutes, the number and size of its competitors and its relations with them, and the impact of law and administrative governmental action.

In this respect, concerns selling articles which are in fact different or which consumers believe to be different from those sold by their competitors are at a distinct advantage over those whose products are in all respects standard. For example, it is obviously impossible for a single seller of such commodities as iron ore, copper ingot, or sulfuric acid to maintain for any appreciable period of time a price substantially different from that quoted by all other sellers in the same market. On the other hand, where buyers for any reason prefer the products of one seller to those of another, they will be willing to pay some premium. It is not essential that such differences represent intrinsic physical differences of utilities; the important point is the buyer's psychological appraisal, the *belief* that a difference exists which makes one product more desirable than another. If a product has acquired outstanding prestige, it is unnecessary for its producer to follow all the ups and downs of the general market. In such fields as packaged medicines, where it is particularly difficult for the average buyer intelligently to compare the merits of similar products, wide differences in price are maintained for long periods of time between merchandise which is virtually identical in all but name.

Because of the close relationship between prices and profits, businessmen are traditionally eager to exercise a substantial degree of control over the prices of their products. In addition they usually favor price stability as a means of facilitating business planning. Price stability may be achieved in many ways. Within limits and for certain products it may be attained by emphasizing quality, services, brand names, advertising, etc. But the accentuation of product differences cannot of itself shield any concern completely from price competition and there are many markets in which it is not applicable. Consequently, more direct schemes to achieve control over prices remain common. These devices include price leadership, conventional arrangements within an industry such as basing-point systems, uniform cost-accounting systems, patent pools, restrictive patent licensing, and outright collusion.

Chapter II. Price Flexibility.—The techniques described above have made the prices of many products relatively stable. On the other hand, there are many business concerns which make no effort to avoid price competition and there are many markets which cannot be effectively controlled. Partly as a result of this situation, there are wide differences between the price behavior of different commodities; some change infrequently and narrowly, others move more freely and widely. These discrepancies are particularly evident during periods of economic upheaval. During the 1929-33 depression, for example, while the prices of such products as copper and hides showed extreme declines of over 70 percent, the prices of other items such as agricultural implements and anthracite coal scarcely fell at all. This tendency of some prices to be flexible and others to be relatively "rigid" raises the first basic issue with which the report is concerned. Although flexibility relates to periods of upturn as well as those of downturn, it is the latter aspect which has received most attention in recent years and which is accordingly emphasized in this report.

While these differences in price behavior are in no sense new, there is evidence that the far-reaching technological and other changes of recent years combined have materially altered the structure of many markets and that as a result inflexible prices play a somewhat more important role in the economy today than was true too, generations ago.

It has been argued that the decline of production and employment in many lines during the downturn of 1929-33 would have been less drastic if price readjustments had been greater. Although this is no doubt true in certain cases, the relationship existing between price and production for any specific commodity is extremely complex and it is unlikely that uniform flexibility of prices, even if it were attainable, would itself turn the tide of depression and bring about recovery. Prompter readjustments during the initial phases of a business decline might retard the downturn, but the effect of practicable price reductions after the recession has become pronounced is clearly limited.

It is particularly important to recognize that any appraisal of this issue of price sensitivity must consider the economy as an interdependent whole. The effects of price changes must be considered in combination with each other and with the behavior of noncommodity prices such as services, rents, wages, interest rates, and taxes, as well.

Moreover, wholesale commodity prices are only part of the picture. Prices paid by ultimate consumers are often the key to whether sales and hence production and employment increase. It is well known that price movements on retail markets are usually narrower than at the wholesale level. Moreover, any policy looking toward increasing the flexibility of wholesale prices as a means of achieving recovery would be of very limited value if at the same time the rigidity of retail prices is increased by the enactment of such legislation as the so-called Fair Trade Acts.

It is apparent that the problem of price flexibility will not yield to any simple solution. No common remedy to induce greater flexibility in price—were that clearly desirable—can be devised. However, there is little doubt that rigid prices which are maintained at unduly high levels through collusive restraints of trade impair the functioning of the economy, and that insistence upon certain broad standards of business conduct such as those prescribed in the anti-trust laws may constitute a distinct step toward the achievement of the goal of sustained employment and production.

Chapter III. Nonprice Competition.—Since differences in consumer acceptance yield individual concerns a distinct degree of freedom in determining the price of their products, it is not surprising that there should be constant efforts to create or accentuate such differences through emphasis upon such elements as quality, performance, and style, supplemented by the use of trade-marks, brands, and advertising. There is today a widespread belief in business circles that competitive efforts should be directed toward these nonprice aspects of competition almost to the exclusion of price, that sales campaigns should emphasize quality, service, and performance and should avoid price cutting as a competitive technique. This raises the second basic issue treated in the report.

It seems reasonably clear that the change in competitive emphasis has not been entirely undesirable. Thus it is probably true that the

increased attention paid to quality and performance has served to stimulate technical research. Certainly the automobile, the refrigerator, and the tractor are more satisfactory products today than they were some years ago. Undoubtedly technical advances would have occurred even if competition focused upon price, but it is at least arguable that centering attention upon quality stimulated its improvement. Conversely, there is some evidence that excessive emphasis upon price may lead at times to undesirable degradation of quality.

On the other hand it must be recognized that emphasis upon quality has often served to divert effort from programs designed to produce cheap but satisfactory merchandise to meet the needs of lower income groups. It has been argued, for example, that the production of cheaper automobiles or refrigerators, stripped of all luxury features, could serve a useful purpose in expanding the potential market for these products.

One of the most serious objections to many forms of nonprice competition is the manner in which they complicate the buyer's problems of selection. Price is a universal measure and the significance of a price difference is readily understood by any buyer. The appraisal of differences in content or quality, or the translation of collateral terms of sale into price equivalents, is much more difficult, particularly for the average untrained consumer. Consequently, when the policy of distinguishing one's product from a competitor's is revealed not in any real betterment of quality but in the multiplication of unneeded gadgets and superficial eyecatching features, there may be a distinct loss of competitive efficiency.

When price competition is suppressed through collusive or coercive tactics it seems particularly pernicious, judged by any social or economic standards. All these schemes have the disadvantage of substituting for a direct price cut, which the consumer wants and can measure, some substitute of uncertain value which he may well forego. If but a small fraction of these economically useless expenditures were translated into reductions in the price level, the gain in public purchasing power and the resulting stimulus to production and employment might be material.

Chapter IV. The Electrical Equipment Industries—An Illustrative Case.—The recent history of a number of industries manufacturing electrical household equipment such as refrigerators, washing machines, and vacuum cleaners presents a number of these policy issues in concrete terms. These are all relatively new industries which have experienced their major growth during the past two decades. Until recently their sales problems have been simple. Their sales were constantly expanding under the influence of improved technology and lower prices. By 1939, however, the market for original equipment among the upper and middle income groups had become largely saturated while prices had not yet been reduced to a level at which members of the lower income groups could participate actively in the market for new equipment. The consequences of this situation were illustrated by an abrupt fall in the sales of electric refrigerators during the 1937-38 recession in contrast to the relative stability of sales between 1929 and 1933.

During 1939, therefore, manufacturers of these products were faced with the need for reorienting sales policies to meet these changing conditions. Two avenues of sales expansion were possible; development of the replacement market among consumers who had already purchased equipment together with improved facilities for the resale of used equipment taken in trade, and expansion of the market among those consumers who had previously been unable to afford to buy. At the time this report was being prepared (in the autumn of 1939), it was suggested that these ends might be achieved by price reductions based partly upon economies of manufacture, but more importantly, upon a less costly system of distribution and also by the development of a coordinated policy for handling trade-in equipment on replacement sales.

Since the beginning of 1940, the refrigerator manufacturers, at least, have begun to adjust their policies along these lines. Prices, which were changed but little between 1933 and 1937, have been sharply reduced for certain models of medium size; economies have been sought in both manufacture and distribution and, it is reported, sales are running above those of last year. These developments clearly indicate the possibility of expansion in production and employment through the reconsideration of business sales policies, and emphasize the need for common consideration of problems of this character by business and government.

Appendix I presents a number of different measures of price flexibility which have been developed to assist research in that field.

Appendix II is a detailed treatment of one phase of nonprice competition; the observance of so-called price lines in the markets for many consumer goods.

Appendix III includes the statistical tables supporting the several charts presented in part I.

PART II—GEOGRAPHIC PRICE STRUCTURES

Part II of the report on Price Behavior and Business Policy treats one specific aspect of business price policy. It consists of a description of geographic price structures for a wide variety of commodities; that is, of the way in which the delivered prices of these commodities vary from point to point in relation to differences in the costs of shipping the product from its origin to its destination.

In the sale of most commodities, conventional practices have developed with regard to the manner in which freight charges are related to the delivered price. Some sellers maintain a uniform price at their plants to all buyers regardless of their location. Others quote uniform delivered prices in all markets or within defined geographic zones. Still others vary their prices systematically or unsystematically in order to meet or undersell their rivals in all markets in which they wish to do business. Some of these practices, notably basing-point systems and zone systems, may result in greatly limiting or eliminating price competition in the markets for the commodities affected.

These types of geographic price structure, particularly the basing-point system, have consequently been the subject of much controversy in discussions of the problems of monopoly and competition in indus-

trial markets. Legislation has been proposed to the Congress which would have the effect of prohibiting the use of basing-point systems. There has not been, however, any general survey of the extent to which different types of geographic price structures are actually encountered in the American economy, nor of the considerations which favor the development of one or another type of practice. Such information seems needed for an adequate general appraisal of the relationship of basing-point systems, zone systems, and other schemes of freight equalization, to the pattern of competition within an industry.

Among the problems with which the Temporary National Economic Committee is immediately confronted is whether the existing anti-trust legislation is adequate to cope with geographic pricing practices which may seem to impair the efficacy of price competition. This volume is designed to yield a summary of the facts needed for a general appraisal of these practices and to serve as background for any legislative proposals which may be made. It describes pricing structures of a wide variety of commodities, industrial, agricultural, and extractive. It does not present conclusions or recommendations.

PART III—PRICES AND PRICE MARGINS IN THE DRUG TRADE

Retail prices—the prices paid by the ultimate consumer—are of primary importance in determining the standard of living, the demand for goods and services, and the amount of work provided and material resources used in their production. Retail prices are in turn closely dependent upon distributive margins; that is upon the spread between prices in wholesale and in retail markets. Part III deals with retail prices and price margins for products handled by the drug trade, such as drugs, toiletries, and drug sundries.

Because of the difficulty encountered by the average consumer in comparing the merits of rival drugs and toiletries, competition between manufacturers has centered largely upon advertising, trade-marks, and attractive packaging. At the same time, it is to the manufacturer's advantage to do all that he can to enlist the active sales cooperation of the retailer in pushing his particular product. As a result many manufacturers have adopted the policy of guaranteeing attractive margins to wholesalers and to retailers by fixing minimum resale prices for their products under the provisions of state resale price-maintenance statutes (the so-called fair-trade laws).

Where resale prices have not been fixed in this manner, there is usually a very wide variation between the prices charged the consumer by different druggists for the same product. Aggressive price cutting by some retailers apparently has had a tendency to cause retail and wholesale prices to decline over a period of years. The wide spread between the prices charged by the manufacturer of these products and the cost of their ingredients makes such progressive reductions possible.

Where minimum resale prices have been legally established, the prices charged by different retailers fall into a much narrower range and in some cases may approach complete uniformity. The absence of aggressive price cutting may also make it unnecessary for the manufacturer to readjust his prices to progressively lower levels.

The data indicate that the prices of nationally advertised brands of drugs and toiletries are usually materially higher than those of virtually identical merchandise which is unbranded or which bears a distributor's private label.

The terms under which manufacturers sell these products to wholesalers and under which drug wholesalers resell to retailers are often very complex, involving various forms of quantity and cash discounts, free deals, and advertising allowances which are illustrated here. Consequently, the gross margin or mark-up of the wholesaler and retailer will vary not only for different kinds of products, but for the same product depending both upon the conditions under which he purchases and the price at which he sells.

In general, however, the wholesaler's gross margin or mark-up on the sale of most drugs, toiletries, and drug sundries approximates 15 percent, while that of the retail druggist approximates 33 percent of their respective selling prices. Margins are usually narrower for popular nationally advertised articles which are often used as price leaders, and somewhat wider for slower-moving merchandise for which prices are rarely featured.

PART I

PRICE BEHAVIOR AND BUSINESS POLICY

BY

SAUL NELSON AND WALTER G. KEIM

ASSISTED BY

LAURA MAE BROWN AND JOHN M. BLAIR

PART I

PREFACE

The behavior of commodity prices is of central importance to the functioning of the economy and is the key to many of the problems with which the Temporary National Economic Committee is primarily concerned. Part I of this study of Price Behavior and Business Policy comprises a general analysis of the relation between commodity price behavior and the policy decisions of businessmen. The four chapters consider in order:

1. *Price behavior and business policy.*—The manner in which the policy decisions of businessmen affect the behavior of commodity prices and the character and variety of goods produced for consumption.

2. *Price flexibility.*—The relationship between the behavior of prices and the cyclical upswings and downswings of business activity, with emphasis on the influence of the flexibility or rigidity of commodity prices upon the level of employment and the utilization of material resources.

3. *Nonprice competition.*—The extent to which businessmen, by their sales policy decisions, have directed competitive effort into channels other than price, and the significance of various aspects of nonprice competition in determining the general standard of living.

4. *The electrical equipment industries—An illustrative case.*—An analysis of the conditions influencing the markets for certain kinds of electrical household equipment, as a specific illustration of the factors considered by businessmen in their price policy decisions, and the consequences of such decisions to the economy.

There are also three appendices, including:

Appendix 1. A detailed presentation of various measures of price flexibility and an analysis of their significance and relationships.

Appendix 2. A description of the practice of selling by "price lines."

Appendix 3. Statistical tables supporting the charts in part I of the report.

Part I was prepared by Saul Nelson and Walter G. Keim, with the assistance of Laura Mae Brown, John M. Blair, and William C. French, Jr. Joseph W. Lethco was in charge of the clerical staff and Sybil Archer of the editorial and stenographic staff for these studies. Jesse M. Cutts of the Wholesale Price Division provided much of the basic material and consulted with the Staff.¹

Chapter IV, dealing with the electrical appliance industries, could not have been written were it not for the helpful information and advice given by many members of these industries and the materials provided by the Bureau's Retail Price Division; the buyers of various department stores located in Washington, D. C. made available much of the material relating to "price lines."

¹ The Bureau of Labor Statistics has prepared for the use of the Temporary National Economic Committee a series of mimeographed volumes on specifications for wholesale price, which list and describe all of the wholesale price data collected by the Bureau. These volumes proved particularly useful in the preparation of this report.

CHAPTER I ¹

PRICE BEHAVIOR AND BUSINESS POLICY

During recent years, attention has been focused upon the behavior of commodity prices as constituting at least one of the factors which contributed to the unprecedented severity and duration of the depression which began in 1929, and of the persistent failure to utilize the Nation's economic resources effectively during the past decade. Specifically, it has been contended that some of the price policies followed by businessmen have been undesirable from the point of view of the national economy; that these policies materially aggravated the severity of the downturn between 1929 and 1933; that they retarded the pace of recovery between 1933 and 1937, and that they again were a factor in the recession of 1937-38.

The joint resolution of the Senate and the House of Representatives creating a Temporary National Economic Committee enjoined the Committee with the duty of investigating "the matters referred to in the President's message of April 29, 1938" including, among others, "the effect of the existing price system and the price policies of industry upon the general level of trade, upon employment, upon long-term profits, and upon consumption."

Much of the problem is implicit in the very phrase "price policy." To say that a businessman has a price policy necessarily means that he has some degree of latitude in determining the prices of the commodities he has to sell (or perhaps of those he wants to buy). In many sections of the economy, of course, no such latitude exists. The farmer, as an individual, for example, can have no price policy with regard to the wheat or cotton he produces. He is so insignificant a factor in the total market that he must simply accept the price as he finds it. The prices of most farm products and of some industrial commodities, (e. g., cotton goods) are arrived at by the interaction of so many buyers and sellers that no one buyer or seller has any appreciable influence upon the result.

In the case of most manufactured products and some raw materials, on the other hand, the individual businessman can exercise some discretion in determining the price of his wares. The manufacturer of steel, of automobiles, of corn flakes, or of proprietary drugs has a very real voice in deciding the price at which he will sell. The extent of this discretion varies widely; it is generally, though not necessarily, greater where competing sellers are few than where they are many. Thus, a manufacturer of milk bottles probably has substantially greater control over the price of his product than does a producer of furniture. There are often important differences within any given industry; the leading producer of gypsum plaster may to a large extent control its price merely by virtue of its dominant size, while smaller competitors must take the market as they find it. No con-

¹ Ch. I was prepared by Saul Nelson.

cern has unlimited latitude in determining price policy; even a "monopolist" must reckon with the competition of substitute products.

For obvious reasons most business concerns seek in many ways to increase their degree of control over prices, sometimes by methods which constitute restraint of trade in the old-fashioned "trust-busting" sense. However, control may also be extended in many other ways which violate neither the letter nor the spirit of the Sherman or Clayton Acts. Far-reaching changes in technology and in market structure during the past generation have materially widened the area of discretion available to individual firms. The increasing differentiation and complexity of manufactured goods offered for sale, together with the widely expanded influence of national advertising have contributed to this effect. In many industries, moreover, the nature of the manufacturing process automatically restricts the field to huge aggregations of capital and discourages the entry of new concerns. The effect of these changes, together with some of the tactics used by business concerns in their efforts to influence the movement of prices, will be considered below.

However, before proceeding to such an analysis, it should be emphasized that the formulation of price policies (with the term "price" used in its narrow sense) is only one phase of a much broader area in which the discretion of individual business concerns may be exercised. To look at price alone is to oversimplify the problem. The character of the commodity which is offered for sale and all the surrounding terms of the transaction must also be considered. Price is merely a focus for all the complex questions involved in industrial management and industrial markets.

In the automobile industry, for example, before the individual manufacturer can set a price for his product, decisions must be reached on many other points. One of the most important is the selection of the income group to which the car is designed to appeal. There may be an alternative between improving the quality of an automobile whose retail price will approximate \$700 or \$800, or producing a much cheaper model to sell for \$400 or \$500. Quality improvement, in turn, may emphasize performance, or riding comfort, or appearance, or possibly the multiplication of minor eye-catching features. The practice of introducing annual model changes represents an important policy decision, based presumably upon the desire to stimulate frequent replacement; it has been argued that less frequent model changes would yield manufacturing economies and lower new car prices, thereby increasing original sales at the possible expense of retarding replacements. Such decisions as these are factors in setting the practical limits within which prices may be fixed.

In planning their general sales strategy, many concerns face a broad choice between emphasis upon price appeal and the expenditure of large funds for advertising. In the field of drugs and cosmetics, particularly, there are wide differences between the prices of virtually identical products. Some of these depend upon extensive advertising for their popularity, others are pushed by dealers because they yield high distributive margins, still others are offered to the consumer at low prices. These techniques may not be of equal social and economic desirability; yet from a purely business point of view each has been rewarded with a degree of success. If the decision is to

stress advertising, other questions arise. Effort may be concentrated upon giving the consumer accurate information as to the nature and use of the product, or the appeal may be primarily emotional, with little or no attempt to present reliable information. In any event price, as such, is in part the result of a decision on advertising policy.

These are but a few of the choices which business men must make in planning their sales policies. As in the case of price policy narrowly understood, the degree of discretion varies but it is never unlimited. The tactics of rival concerns and the preferences and prejudices of consumers must always be considered. Such limits of discretion establish the framework within which business sales strategy must be planned. The broad objectives of this strategy may now be considered.

In a competitive economy, it is axiomatic that the policy decisions of individual business concerns are primarily directed toward increasing profits. It is much more difficult to generalize with respect to the strategy selected to achieve this end.² Nevertheless, the evidence seems to warrant several observations.

Because of the intimate relationship between prices and profits, businessmen are traditionally eager to increase the degree of discretion which they can exercise with regard to the price structure. They are understandably reluctant to permit the course of prices to be determined entirely by the impersonal forces of the market. Often, though not necessarily, this implies a striving toward price stability; toward relatively infrequent changes in price as a means of facilitating business planning.

The tactics by which control over price can be achieved are profoundly affected by the nature of the commodity involved. In the case of some products, such as wheat or ingot copper, buyers do not generally recognize any difference between the wares of rival sellers. These will be referred to for convenience as "standard" commodities. The absence of any form of buyer preference means that no individual seller can, for any appreciable period, charge a significantly higher price for his product than is being quoted by his rivals. There may be exceptional cases in which a concern controls so large a share of the total supply of the product that buyers cannot satisfy their requirements without patronizing it; under such circumstances it is conceivable that price differentials can be maintained. In general, however, it is clear that individual sellers of standardized products cannot effectively maintain independent price policies. The formulation of price policies and the achievement of price stability for goods of this kind requires, in one form or another, the participation of all or most competing producers.

However, for many, perhaps most, manufactured goods a different situation prevails. Buyers of such items as automobiles, or dresses, or aspirin, for example, do not generally consider the merchandise offered by competing sellers to be equally desirable in all respects. The difference between rival merchandise may relate to inherent physical characteristics involving such factors as quality, performance, style, or taste. However, buyer preference may exist without such

² One of the many considerations involved may be the relative emphasis placed by business concerns upon immediate profits from quick turnover, profits over the intermediate term, and profits over a long term of years.

physical differences; trade-marks, brand names, or the prestige of the manufacturer or distributor may be the significant elements. The important point is the buyer's psychological appraisal; the *belief* that a difference exists which makes one product more desirable than another at the same price, or that the payment of a premium for one as compared with another is warranted. Commodities of this kind may be termed "differentiated."

There is, of course, no sharp line of demarcation between "standard" and "differentiated" products, but rather an insensible gradation. The difference between two makes of automobiles is probably more apparent to the buyer than that between two makes of tires, yet it is clear that in the latter case, too, such differences are by no means a negligible factor in the market. Brand prestige is more important for aspirin than it is for canned vegetables and, in turn, more for canned vegetables than for sugar; yet even in the case of sugar, brands play a definite role in differentiating the product of one seller from that of another. Moreover, in the case of products apparently "standard," such as steel rails, there may be such differences in promptness of delivery or perhaps in incidental services rendered as would result in the creation of buyer preferences.

For the purpose of the present discussion, however, this distinction between markets in which buyer preference is unimportant and those in which it plays a significant role is useful; although the lack of any sharp dividing line should be constantly borne in mind. The existence of buyer preferences, however achieved, yields to the individual seller an important degree of latitude in formulating his price policy without constant reference to the actions of his rivals. It is not necessary for a manufacturer whose product has acquired outstanding prestige to follow all the ups and downs of the general market for similar commodities. A number of illustrations of this situation are assembled in chapter III of this report (pp. 75-90). For example, the retail price for a nationally advertised brand of men's business shirts showed practically no change between 1929 and the present, while the prices of less known brands meeting similar specifications declined materially. In such fields as packaged medicines, where it is particularly difficult for the average buyer intelligently to compare the merits of similar products, wide differences in price can be maintained for long periods between merchandise which is virtually identical in all but name.

Since product differentiation increases the area of price discretion, it is not surprising that business concerns should strive to create or accentuate differences—intrinsic or apparent—between their products and those of their rivals. During recent years there has, in fact, been a distinct tendency for competitive strategy to emphasize elements other than price.

In addition to the greater latitude in formulating price policy which this technique yields, it often seems expedient for other reasons to base sales appeal upon nonprice factors. As a competitive weapon, price reductions are double-edged. A company which reduces prices in order to obtain business must anticipate the likelihood that its competitors will follow its lead; that any advantage it gains may be no more than momentary. Most price reductions can be duplicated exactly; if one concern reduces its prices by five percent and its rivals follow the same course their relative position in the market may be

unaltered. Changes in quality features are more difficult to duplicate quickly or precisely, and the competitive advantage they yield may well be more lasting.

In addition, producers of rival commodities are far less likely to resent improvements in quality than direct reductions in price. The latter often lead to price wars, the former rarely. During the last 20 or 30 years there has been intensive and very effective propaganda conducted by trade associations and by some business concerns designed to convince businessmen generally that price competition is somehow sordid and should be eliminated. There is today a widespread belief in business circles that competitive effort should be directed toward the nonprice aspects of competition almost to the exclusion of price; that sales campaigns should emphasize quality, service, and performance and should avoid price cutting³ as a competitive technique.

The accentuation of product differences cannot of itself shield any concern completely from the impact of price competition. The degree of protection afforded is greater for some products than for others, but it is never absolute. Moreover, wherever buyers are equipped to compare the merits of rival products intelligently, price differences cannot be ignored. This is particularly true in industrial markets: institutional buyers are usually more skilled than domestic consumers in comparing merchandise and price retains major force as a sales weapon. In the case of raw materials and semimanufactured goods it is often difficult to create any convincing appearance of product differentiation.

Consequently, the effort of businessmen to cushion the force of price competition cannot rest with the attempt to shift emphasis to nonprice channels. More direct schemes to achieve control of price behavior remain common. It is not within the scope of the present discussion to describe these devices in detail, but a few illustrations are pertinent.

The extreme case, of course, is that of the outright monopoly whose latitude in price policy formulation is limited only by the possibility that expenditures will be diverted to other products. However, such situations are extremely rare in the United States. Almost as complete a degree of control may be achieved through such devices as patent pools or rigid licensing agreements, such as apparently prevail in the glass container⁴ and plasterboard industries.

In the absence of such conditions, concerns in various industries have at times resorted to collusive agreements for maintaining prices or sharing markets. The technique known as price leadership may represent an effort to achieve similar results without overt violation of the antitrust laws. This means that some one concern in an industry, usually outstanding in size or prestige, regularly initiates all changes in price and that its competitors consistently follow its lead.⁵ Conventional arrangements within an industry such as basing point

³ The term "price cutting" is here used in the sense commonly used by businessmen; i. e. price reductions for the purpose of gaining direct competitive advantage. Price reductions reflecting actual manufacturing economies are not in equal d flavor.

⁴ See Temporary National Economic Committee Hearings, Part 2, pp. 377-834.

⁵ It should be pointed out that market situations which have the outward appearance of "price leadership" may also be accompanied by activities whose status under the antitrust laws is more questionable. For example, the following letter written by H. A. Dorenbusch, general sales manager of the Newport Rolling

systems, by reducing the importance of plant location as a competitive element, presumably facilitate the maintenance of such price understandings.⁶ The same principle applies to what are known as base-price systems, under which the prices of many different products are determined by the application of a generally accepted schedule of extras and deductions to a nominal base price. Both of these practices are observed in the steel industry. By reducing the points at which variation may occur, the formulation of price policy is simplified and the maintenance of price uniformity between rival producers facilitated. Other practices designed to achieve similar ends which may be used separately or in conjunction are open-price systems which permit each concern to know what its competitors are charging and uniform cost-accounting systems whereby all concerns base their pricing policies upon identical or similar methods of calculation.

Naturally all of these devices work more smoothly where competing sellers are few than where they are many.⁷ For example, in an industry consisting of only five concerns it is usually simpler to obtain general observance of the prices set by the "leader" than if there were a hundred concerns. Even a single company of relatively small size which elects to cut prices rather than to conform with the level quoted by most of its rivals may prove to be a serious disrupting influence. Although there are many ways in which more or less direct coercion can be applied to prevent such defections, these are not always satisfactory or free of danger. Consequently control is easier to exercise in industries in which technological requirements make huge amounts of capital necessary for successful operation. The number of concerns in such industries is necessarily limited and the entry of new enterprise difficult. Price stability is also promoted because established concerns are less likely to resort to aggressive price cutting as a means of expanding their share of the market than new companies which are seeking to win a place for themselves.

In summary, there is evidence that business today, as in the past, seeks to avoid the full impact of price competition. Frequent price fluctuations are commonly regarded as inexpedient; some degree of price stability is preferred. Such stability may be achieved by various forms of agreement or understanding within industries such as patent

Mill Co., to the president of that company, on August 17, 1935, suggests that price leadership is occasionally implemented by more positive methods:

"Mr. A. K. ANDREWS,
Footes Bay, Ontario, Canada.

"DEAR MR. A. K.: It was not definitely decided until late last evening to put into effect for fourth quarter a one-price policy allowing the galvanized sheet price to remain at \$3.10 per 100 pounds for No. 24 gauge base f. o. b. Pittsburgh. A few of the larger interests such as Weirton and Inland were in favor of reducing the price to \$3 base for No. 24 gauge f. o. b. Pittsburgh but this was finally defeated and it was agreed to allow all prices to remain the same as now in effect.

"The announcement of no further jobber allowance after October 1 will be made by Continental on Tuesday of next week after which all mills can announce likewise. We, of course, in the meantime will notify our people which no doubt will be conducive of causing an influx of jobber business for shipment prior to October 1.

"It is my intention to discuss this with Mr. Little this morning so that we will be prepared to take care of the rush that we like others will no doubt have during the month of September.

"I discussed the automotive situation with Nell Flora, secretary of the National Association of Flat Rolled Steel Manufacturers, last evening and he informed me that while some little tonnage was placed several weeks ago, nothing more has been done and that all the mills are holding firmly to their prices and are expecting that additional tonnages will have to be placed soon." (Temporary National Economic Committee, Hearings, Part 27, morning session, January 30, 1940.)

⁶ See Part II of this volume.

⁷ But the mere force of business custom may be responsible for general maintenance of price practices in otherwise highly competitive industries, such as the garment trades, where competition is on style and other nonprice factors.

controls, collusive arrangements or perhaps by the price leadership technique. The multiplication and accentuation of differences between rival products, by diverting competition from price channels, has also yielded individual concerns greater latitude in determining the prices of their wares.

These trends are specific examples of the manner in which sales policy decisions of business concerns affect the structure of the market. More generally, it is clear that the orientation of business policy has important consequences for the functioning of the economy. It influences the pattern and behavior of prices, the amount and variety of goods produced, the level of employment and the standard of living of the population. It is in the light of these effects upon the general well-being that basic issues of public concern arise.

Two of these basic issues have been selected for analysis in this report. The first relates to the effects of business price policy decisions, as reflected in the behavior of commodity prices, upon recession and recovery. The second concerns the economic implications flowing from broad choices of competitive strategy, particularly as expressed in the trend toward nonprice competition, upon the manner in which economic resources are used, and upon the general standard of living.

These issues necessarily overlap, since the behavior of prices is importantly affected by the direction which competition takes. Conversely, prices and price movements in the abstract have little significance. It is idle to inquire merely whether a particular price is high or low, whether it fluctuates freely or infrequently, whether its long-term trend is up or down, or even whether it reflects impersonal market forces, price policy decisions, or perhaps monopoly control. The behavior of the prices of any commodity is significant only when it is related to its broad economic setting.

Nevertheless, it is useful to examine these two problems separately, though their related character must be borne in mind constantly. This is done in the two chapters immediately following. In the final chapter the issues are once more brought together; the character and implications of the policy decisions confronting the members of a group of industries are examined in some detail.

CHAPTER II¹

PRICE FLEXIBILITY

SUMMARY

Prices of different commodities respond quite differently to changes in market conditions. This is particularly apparent during periods of violent economic upheaval, when the entire price structure is being subjected to powerful unsettling influences. During the 1929-33 depression, for example, while the prices² of such commodities as copper or hides showed extreme declines of over 70 percent, the prices of other items such as agricultural implements and anthracite coal scarcely fell at all. Prices in the first category are called flexible, or sensitive; those in the second rigid, inflexible, or insensitive.

These differences in price behavior have many causes. Some are peculiar to the commodities in question; for example, the extreme decline in the price of rubber during the depression was at least partly due to the devaluation of the pound sterling, while the increase in the price of hops between 1929 and 1933 may be traced to the legalization of beer. In addition, however, more general considerations, such as intrinsic differences in market structure, play an important role. It was pointed out in the preceding chapter that the prices of different commodities are influenced in varying degrees by the price policy decisions of business concerns. It is probably true that prices are most flexible where individual producers enjoy little or no discretion in determining their price policies and that outstandingly rigid prices usually occur where a high degree of latitude in price policy formulation is available. Presumably this reflects the general preference of business concerns for relatively stable prices and the fact that business price policy is directed accordingly. Whether or not such policy decisions necessarily denote the presence of "monopoly" in the sense implied in the antitrust laws, there is little doubt that the development of restrictive trade practices of many kinds aimed directly or incidentally at achieving price stabilization have decreased the fluctuations of prices of certain commodities.

These differences in price behavior between different types of commodities are in no sense new phenomena. It has long been observed, for example, that the price movements of manufactured goods are in general narrower than those of agricultural products. Nevertheless, there is evidence that the far-reaching technological changes of recent years have materially altered the structure of many markets

¹ Ch. II was prepared by Saul Nelson. Walter G. Keim devised the Index of price dispersion and contributed to the sections on Price Relationships and Prices and Production. Joseph W. Lethco assisted in preparing the statistical data.

² In this discussion the term "price", unless otherwise noted, is used to signify wholesale price and particularly wholesale price as reported by the Bureau of Labor Statistics. The Bureau's wholesale prices are generally those received by the producer or manufacturer of the item in question; freight to destination may or may not be included. Wholesale price in this sense does not mean the price paid by retailers to wholesalers.

and that, as a result, inflexible prices play a somewhat more important role in the economy today than was true a generation ago.

There has been much controversy regarding the economic accompaniments of these differences in price behavior. This controversy has centered about the effects of price rigidity upon the economy during periods of general business depression; little or no attention has been devoted to the problems arising during booms. It has been contended that, in general, the decline in production and employment during periods of recession is considerably more marked in those industries whose price structures are rigid than in those whose prices are flexible. Especial stress has been placed upon the plight of the farmer; upon the contrast between the sustained production and falling prices which characterized the products which he had to sell, and the curtailed production and sustained prices of those industrial products which he had to buy.

It has been argued that the decline in production and employment in many lines during the downturn of 1929-33 would have been less drastic if price readjustments had been greater. Similarly, decisions by business concerns to increase the prices of certain products during the winter of 1936-37 may have played a role in checking recovery, particularly in the construction industry. Although this is no doubt true in certain cases, the analysis presented in this chapter emphasizes the fact that the relationship existing between price and production for any specific commodity is extremely complex and that it is impossible to conclude that uniform flexibility of prices even if it were possible would turn the tide of depression and bring about recovery. For example, there is a numerous class of products for which isolated changes in prices are unlikely to be reflected in material changes in consumption. Thus demand for any building material is determined largely by the general rate of building activity. A reduction in the price of building tile taken alone, for example, would probably have so small an effect upon the total cost of building that its demand would not be appreciably stimulated thereby. Similar instances of "joint demand" occur in almost every field. The sale of buttons or of yarn depends upon that of apparel; the demand for spark plugs in part upon that for automobiles, etc. Isolated changes in the prices of such individual commodities can have little or no effect upon the cost or price of the finished product and consequently upon their own sales, though in combination with similar changes in the prices of related products their cumulative effect may be very considerable.

Moreover, there are certain distinct limitations to the extent to which price reductions might be expected to stimulate the sales of certain kinds of product during periods of severely curtailed purchasing power. This is particularly true of those products which are not absolute necessities of life or whose purchase can be postponed, such as durable goods. For example, sales of agricultural machinery during 1932 had declined to 18 percent of their 1929 level. In all probability, reduced prices would have stimulated sales somewhat. However, the decline in sales was largely due to the fact that the income of most farmers had fallen so low that it was completely earmarked for expenditures that would brook no postponement such as taxes, interest, food, fuel, seed, and the like. There was nothing left over for purchases which could be delayed a year or two, and machinery generally

fell into this latter class. It is possible that prompter price readjustments for these products during the initial phases of a business decline might retard the downturn, but the effect of practicable price reductions after the income of the farmer has already declined materially is clearly limited. Similar considerations apply to many other products such as automobiles, furniture, jewelry, and, even in a more limited degree, to clothing.

The structure of the economy imposes another serious limitation upon the benefits which might be derived from greater declines in prices which are more or less inflexible during a depression period. It has been argued that the disturbance of market relationships would be minimized if all prices rose and fell freely in response to changing economic conditions. It is contended, for example, that if the prices of what the farmer had to buy had fallen about as sharply as did the prices of the things he had to sell, the effects which flowed from the contraction of his purchasing power could have been largely averted. However, this would have been completely true only if all prices had been equally free to move; that is, if wages, interest rates, utility rates, the prices of services, rents, depreciation, taxes, and so on had all fallen together.³ Moreover, it assumes the absence of long-term loans and mortgages which require fixed servicing regardless of price trends. In other words, increased sensitivity of commodity prices alone can only have limited (though perhaps significant) effect unless these other types of noncommodity prices are also flexible.

All these factors must be accorded due weight in orienting public policy to deal with the problem of recovery insofar as it is related to prices alone. Thus it remains to define the objectives of public policy in relation to prices. So far, there has been a notable lack of any concrete suggestions for a coordinated approach to governmental action with regard to price policies.⁴ Although it is no doubt true that the extreme disparities in price behavior exhibited since 1929 materially aggravated the recession and retarded recovery, there is no evidence to show that it would be desirable—even if it were possible—for all prices to be equally sensitive to changing business conditions.

It may well be that by attacking monopolistic prices which are in any event objectionable, the flexibility of the prices of the products affected can be increased. But it is particularly important that the limited character of the benefits which could be derived from inducing *isolated* price changes be recognized.

It is apparent, therefore, that any appraisal of this issue of price sensitivity must consider the economy as a generally interdependent whole. Although there are certain broad sectors of the economy—e. g., the construction industry—which may for some purposes be considered independently of other sectors, it must be recognized that a *commodity by commodity* approach to the problem is of little value. The effects of price changes must be considered in combination with each other and with the behavior of noncommodity prices as well. It must also be recognized that changes in price will themselves

³ Of course there is no implication that these declines should be proportional.

⁴ A set of general principles was prepared by an interdepartmental committee and announced by President Roosevelt on February 18, 1939; these dealt with objectives rather than methods.

affect the income of producers and thereby alter the aggregate national purchasing power—as well as its distribution.

Moreover, it should be emphasized that *wholesale* commodity prices are only one part of the picture. Price movements on retail markets are usually narrower than at the wholesale level. In some fields price rigidities are introduced and aggravated by the present system of distributing goods from producer to consumer as indicated in chapter III. Much recent legislation—both State and national—has had as a major or incidental objective the protection of traditional channels of distribution against the impact of newer methods of selling. This is true, for example, of chain-store taxes, resale price maintenance laws (the so-called Fair Trade Acts), the Unfair Practices Acts⁶ and antidiscrimination laws such as the Robinson-Patman Act. If the effects of price rigidities upon the economy are harmful, it would seem desirable to avoid the enactment and administration of legislation of this kind.

Finally, it must be observed that the approach to the problem of sustained employment and production via the study of the flexibility of prices, while it brings to light certain industrial practices which may be in need of correction, emphasizes again that each commodity must be considered in relation to its market. Although certain broad standards of business conduct, such as those prescribed in the anti-trust laws, may be generally required, and although the enforcement of such standards may materially affect the behavior of certain prices, yet it is evident that no one common remedy to induce greater flexibility of all prices—were that end clearly desirable—can be devised.

The following analysis concerns that aspect of the problem upon which the discussions of recent years have centered—the effect of price rigidity upon production and employment during periods of recession or of low business activity. If the rate of industrial activity should advance rapidly, it may become necessary to center attention upon *price increases* rather than price decreases. There may be substantial advances, for example, in certain flexible prices which have been at relatively low levels, and at the same time, there may be also marked increases in prices of less flexible commodities, particularly those whose extreme rigidity during the past decade reflected the presence of some degree of price control. Should this happen, questions of public policy might well focus upon types of price adjustments which are conducive to sustained recovery in business, rather than upon those which might be expected to check a decline in business activity. In the case of some products, moreover, it may become necessary to consider prices and price relationships primarily in terms of the speedy progress of a defense program, regardless of their broader impact upon the economy.

THE NATURE OF THE PROBLEM

In the preceding chapter it was pointed out that the prices of different commodities are, to varying degrees, subject to the influence of policy decisions by businessmen. For some products, such as corn or cotton, the number of buyers and sellers in the market is so great that such individual policy decisions can exercise no more than an infinitesimal effect. For other products, including most manufactured

⁶ State laws prohibiting sales by distributors at less than invoice cost, plus certain specified mark-ups.

goods and some raw materials (e. g., sulfur), where the number of buyers and sellers is smaller, the influence of policy decisions may be considerable. For convenience in reference, prices in the former group have often been called market prices and those in the latter group policy influenced prices.⁶ Of course policy influenced prices are not immune to market influences; presumably the seller is guided by his appraisal of market conditions in fixing his quotation. However, the adjustment of prices to changing market conditions is less direct and less immediate.

The connotation of the term "policy influenced" implies that the individual seller (or buyer) has a degree of leeway in formulating his price policy; that he can exercise some control over his segment of the market. However, it is important to recognize that such control is not necessarily synonymous with monopoly power in the sense implied in the antitrust laws. Thus, it has been pointed out (see ch. I, p. 6-8) that the sellers of differentiated products bearing distinguishing names, trade-marks or brands may frame their price policy without the need of constant reference to the prices quoted by rivals. Devices that have been recognized as collusive or monopolistic may enlarge the area of price control, but they are not essential to it.

It is important to emphasize that "policy influenced" is a relative rather than an absolute concept. There is no sharp division, no dichotomy, in the universe of prices, but rather a gradation. In the case of most commodities, there is a constant interplay between price policy decisions and the influence of immediate market conditions. The relative importance of these two factors is constantly shifting; for example, prices which may largely reflect price policy decisions during a normal market may be largely market determined either during an extreme sellers' market when buyers are vigorously bidding against each other for goods, or during a buyers' market when distress induces sellers to offer wide concessions to obtain business. Moreover policy influenced prices may be, and frequently are, altered to meet the needs of the individual transaction. Even in the case of such commodities as steel, usually considered an extreme example of price administration, indirect rebates and concessions have been granted where the pressure from buyers has been sufficiently great.

Despite these reservations, the distinction is not without meaning. The prices of such commodities as automobiles or steel, on one hand, and of wheat, on the other, are determined by different processes. And, although the process of determination implies no necessary type of price behavior, yet these differences are, in turn, frequently reflected in the behavior of their respective price quotations.⁷ In general, it may be said that market prices are constantly adjusting to every change in market conditions, with no single buyer or seller able to affect their level appreciably. In contrast, the day-to-day course of policy influenced prices displays no such constant adjustment. A common illustration of this latter kind of price making is the automo-

⁶ Policy influenced prices, denoting those whose behavior is importantly influenced by business policy decisions, have often been referred to in the past as "administered" prices. However, Mr. Gardiner Means, who seems to have originated the latter term, uses it in a connotation somewhat different from that here imputed to policy influenced prices. According to Mr. Means—

"A price can be classed as an administered price if it has been set and held constant for a period of time covering successive transactions."

Mr. Means has called attention to this difference in usage. In view of the confusion which may result from employing the same term to denote two distinct concepts, the phrase "policy influenced" has been used in this report in place of "administered."

⁷ The term "quotation" is used advisedly, since these often remain at unchanged levels even though unreported concessions or rebates are modifying actual prices.

bile industry in which the producer sets the wholesale price for each model at the beginning of the production year and maintains it at that level for many months or for the entire model year.

These differences in price behavior are particularly noticeable during periods of severe economic upheaval, when the markets for virtually all commodities are subject to violent unsettling influences. Thus during the general downswing of 1929-33 the prices of some commodities (e. g., cotton, oats, steel scrap) fell more than 60 percent; the prices of others (e. g., salt, steel rails, cigarettes) remained relatively stable; some, such as the price of gypsum plaster, actually rose to higher levels than prevailed at any time between 1926 and 1929. During the subsequent recovery from 1933 to 1937 the picture was reversed; the rise of prices was roughly proportional to their previous decline.

Some relationship, subject to very numerous exceptions, may be traced between the manner in which commodity prices behaved and the process dominant in their determination. Although no attempt was made to classify products directly according to the relative impact of policy decisions upon their price structures, it seems broadly true that "market" prices (as defined on p. 15) fell farthest and recovered most; in other words they were most flexible or sensitive. Prices of commodities whose market structures make probable some degree of policy control in general moved less widely; they tended to be rigid, inflexible, or insensitive, though in some cases at least they apparently showed less resistance to the rise than to the decline.

This contrast in the behavior of the wholesale prices of different commodities, reflecting their differential responsiveness to changing market conditions, has received much attention during recent years.⁸

⁸ A list of some of the principal recent works on the subject follows.

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The sharp decline experienced by the prices of certain commodities during depression has been contrasted with the apparent stability or rigidity of others. It has been suggested repeatedly that the presence of these rigid prices has interfered materially with the process by which each economic maladjustment might otherwise automatically induce its own swift cure. The persistent underutilization of our economic resources since 1929 has been accordingly attributed, at least in part, to the prevalence of these rigidities,⁹ or to the failure of Government policy to take account of their existence.

In brief, these arguments may be summarized as follows:

(1) The prices of the commodities on our markets may be divided into two fairly distinct categories, depending upon the process dominant in their determination. Where immediate market forces are uppermost, prices tend to be flexible, or highly responsive to changing economic conditions. Where businessmen have a degree of freedom in determining price policy, prices are usually more rigid or less sensitive to immediate market forces.¹⁰

(2) These discrepancies in price behavior, while not precisely new phenomena, have for a variety of reasons been accentuated during recent years.

(3) Certain consequences have ensued from this development, including particularly:

(a) The "automatic forces" which classical economists presumed would regulate the economy have been impaired "because the conditions which once promoted the easy and equitable operation of such forces have ceased to exist."¹¹ The failure of "natural" recovery to set in during the depression has been attributed at least partly thereto.

It has been contended that where prices are inflexible the burden of adjusting to changing conditions necessarily falls upon production rather than upon prices and that, as a result, manufacturing activity and employment are curtailed far more sharply during periods of

⁹ Thus to Prof. Henry C. Simons, "The existence of extreme inflexibility in large areas of the price structure was one of the primary factors in the phenomenon of severe depression. This inflexibility increases the economic loss and human misery accompanying a given deflation and causes deflation itself to proceed much further than it otherwise would." (Prof. Henry C. Simons, *A Positive Program for Laissez Faire*, University of Chicago Press, p. 14.)

¹⁰ Thus, according to Gardiner C. Means, "• • • the widespread presence in our economy of inflexible administered prices" • • • had "produced highly disrupting effects in the functioning of the economy" • • • and was • • • "largely responsible for the failure of a policy of laissez faire" • • • there are two essentially different types of market in operation—the traditional market in which supply and demand are equated by a flexible price and the administered market in which production and demand are equated at an inflexible administered price. In the first type of market economic adjustments are brought about primarily by fluctuations in price. In the second type of market economic adjustments are brought about primarily by changes in volume of production, while price changes are of secondary significance in producing adjustment.

"The difference between market prices and administered prices is clear. A market price is one which is made in the market as the result of the interaction of buyers and sellers. The prices of wheat and cotton are market prices as are many other agricultural products. This is the type of price around which traditional economic theory has been built.

"An administered price is essentially different. It is a price which is set by administrative action and held constant for a period of time. We have an administered price when a company maintains a posted price at which it will make sales or simply has its own prices at which buyers may purchase or not as they wish. Thus, when the General Motors management sets its wholesale price for a particular model and holds that price for 6 months or a year the price is an administered price. Many wholesale and most retail prices are administered rather than market prices. For administered prices the price is rigid, at least for a period of time, and sales (and usually production) fluctuate with the demand at the rigid price." (Means, Gardiner C., *Industrial Prices and Their Relative Inflexibility* (74th Cong., 1st sess., S. Doc. No. 13).)

¹¹ Thus, according to an extensive analysis of the Canadian economy, conducted during 1931 and 1935 by a Royal Commission, "It is, furthermore, a tragic delusion that the solution for these economic problems can be left to automatic forces, because the conditions which once permitted the easy and equitable operation of such forces have ceased to exist. These conditions presupposed two things, first, an economic system composed of small independent units, no one of which counted in that system for more than an element in a statistical average; second, the free appearance and disappearance of these units and their free entry into and withdrawal from the market. With the growth of imperfect competition, however, these conditions no longer exist. Nor can we assume any longer that this monopolistic tendency is a merely incidental intrusion into a system predominantly and naturally competitive." (Report of the Royal Commission on Price Spreads, ch. II, p. 9.)

recession than would be true if prices fell more rapidly. "Necessary (price) readjustments are therefore concentrated on the flexible sections of our economy where their effect is intensified by rigidity in other sections."¹²

(b) At the same time the discrepant behavior of different kinds of prices during periods of recession is alleged to create serious price unbalances between various sections of the economy, destroying normal exchange relationships, and thereby causing distress both among buyers whose purchasing power is impaired and among sellers whose markets are narrowed.

(4) Public policy must take cognizance of these effects of price insensitivity and must in one or another manner strive either to reduce their incidence or else to compensate for their consequences. Such action forms a necessary part of any program designed to achieve and maintain a high level of productive activity.

These contentions and inferences have been vigorously debated. Most of the attacks upon their validity seem to have centered upon questioning what seems largely a side issue; namely, that the existence of inflexible prices is largely a new phenomenon. It is argued that these conditions have always existed, that they are an essential part of the structure of our economy and that the basic causes underlying the unsatisfactory character of current adjustments must be sought elsewhere.¹³

"* * * all these circumstances unbalance modern economic society in the sense that not all of its parts adjust themselves at the same speed or in the same degree to any influence that makes itself felt at any one point. Necessary readjustments are therefore concentrated on the flexible sections of our economy, where their effect is intensified by the rigidity in other sections. When different parts of a glass tumbler expand or contract at different rates, the whole glass may be cracked. If the economic structure is in part flexible, and in part rigid, any strain may lead to complete collapse." (Ibid.)

And, according to a subsequent publication of which Dr. Means was coauthor, "Wherever the new type of industrial unit has introduced the factor of administration, it has substituted human judgment for automatic processes. Where administration has a hand in determining price it undermines the central mechanism of automatic, flexible prices upon which the old economy relied for its adjustments. Where it affects the character of competition, it modifies the structural framework within which economic activity is carried on. Where it affects the nature or results of profit seeking it perverts the old economy's central drive * * *."

"The disastrous effect of this type of price upon the automatic mechanism of the old economy cannot be overstated. According to laissez faire assumptions, there can be no general oversupply of goods or unemployment of people because prices will adjust until everything which anyone is willing to sell is sold and until everyone willing to work is employed. But when adjustments are made through volume of production instead of through price the result is very different. When a drop in demand is met by cutting down production, workers are laid off. If this is the general reaction throughout industry, there is no place for these workers to go for new jobs even if they are willing to take lower wages, since wages like other forms of prices are commonly administered, particularly in the concentrated industries. Without jobs, they cannot buy, and their unemployment leads to a further drop in demand for products. If adjustment is again made by dropping production instead of by lowering price, the effect is only to make matters worse by laying off more people and thereby reducing demand still further. Such a process can go on until industry is virtually at a standstill and unemployment is widespread. In place of the reactions that were automatically set in motion to restore a balance under the old conditions of flexible prices, the opposite reactions here tend to make the situation progressively more grave." (The Modern Economy in Action, by Caroline F. Ware and Gardiner C. Means, ch. II, pp. 18, 22-23.)

¹³ Thus, Don D. Humphrey reaches the conclusion that rigid prices are not a unique characteristic of current conditions but that they were present also during the entire period between 1890 and today. (The Nature and Meaning of Rigid Prices, 1890-1933, by Don D. Humphrey, The Journal of Political Economy, vol. XLV, No. 5, October 1937.)

Similarly, Rufus S. Tucker in a recent article wrote: "It is obvious that the two kinds of prices have been sharply differentiated for at least a century. In fact, that differentiation was commented on by Adam Smith in 1776 when he wrote 'that the price of linen and woolen cloth is liable neither to such frequent nor to such great variations as the price of corn, every man's experience will inform him.' And the extent of that differentiation was apparently greater in 1884 and 1879 than in 1933. In fact, the published prices do not show the whole of it, for it is a well-known fact that since 1929 some of the 'administered' products have improved in quality and size to such an extent that the Bureau of Labor Statistics price quotation is misleading. Their price has in effect gone down more than the quotation would indicate." (The Essential Historical Facts About Sensitive and Administered Prices, by Rufus S. Tucker, The Annalist, February 4, 1938, pp. 195-196.)

This last point is criticized by Gardiner C. Means on the ground that it does not take into consideration the offsetting factor of improvement in the techniques of production which tend to save both materials and labor: "Surely the engineering force which has improved goods so greatly has not failed to bring about improvements in technique in production so as to save both materials and labor. When improvements in technique of production are offset against improvements in cost of production, is it any reason to think that the price figures published by the Bureau of Labor Statistics would be altered in a significant manner by adjustment for both factors? This is a matter which certainly should be investigated, but I doubt if the net effect of a full adjustment would significantly alter the relational picture I have presented." (Gardiner C. Means, Notes on Inflexible Prices, The American Economic Review, Supplement, March 1936.)

That there is some force in these contentions is undeniable. Nevertheless, it does seem probable that the relative importance of insensitive prices in our economy has increased materially during the past half century. In the first place, the character of the commodities on our markets has been undergoing a constant change. An ever larger share of the national income goes for the purchase of manufactured products.¹⁴ Moreover, the degree of processing to which goods are subjected seems to be continually increasing. Automobiles replace buggies; packaged and processed foods are substituted for the more staple items purchased by the housewife of an earlier day; clothing is bought ready-made instead of being fabricated at home from piece goods or yarn, and so on ad infinitum. Since it is generally conceded that the price of manufactured goods shows typically less flexibility than that of raw materials it may well be inferred that the area of inflexibility is increasing.

At the same time, the intensity of price competition in many lines has been reduced through the operation of forces described in the preceding chapter. Increasing differentiation between the products of rival concerns, changing business mores, and high capital requirements for entry into business have all played a role in shifting competitive emphasis to nonprice channels. Although statistical evidence is difficult to assemble, it seems probable that this changing pattern of business relations has reduced the apparent flexibility of the prices of a great number of commodities.

It may be concluded, therefore, that a materially larger sector of the price universe must be classed as insensitive today than was true in the earlier years of the twentieth century. Consequently, the undoubted fact that certain prices have always been less flexible than others does not negate the possibility that recent economic trends have aggravated the disparity. Nor is it necessarily pertinent that, as Tucker points out,¹⁵ the degree of divergence in behavior between those prices which were then flexible and those which were then inflexible was as great formerly as today. The widening area of price inflexibility may have transmuted what was once an incidental phenomenon into a more serious unsettling influence. Moreover, it is possible that changes in surrounding economic circumstances have intensified the impact of types of price behavior whose influence was hitherto obscured. The relevancy of historical comparisons is clearly limited. Under the circumstances, the contention that price inflexibility has long existed does not eliminate the desirability of reappraising its effects in the light of current conditions.

The disagreement as to assumptions is reflected in the discussion of programs for action. Those who dismiss the entire subject as unimportant suggest that the efforts of government can more profitably be expended in other directions. Unanimity is lacking even among those who feel it essential that steps be taken to deal with the problem presented by inflexible prices. Some contend that inflexible

¹⁴ Thus Ralph C. Wood writes, "Neither Gardiner C. Means nor Dr. Tucker . . . has mentioned that the relative importance of many flexible priced products, notably agricultural products, have greatly declined. The decline is apparent in all the series which may be deemed most relevant, physical volume of output, value of output, and number of employees. Conversely, the relative importance of many inflexible priced products has greatly increased. . . . Common observation powerfully suggests that the expanding area and changing components of the industrial scene have magnified the importance of inflexible prices and hence have increased the rigidity of the prices in some very fundamental ways." (Ralph C. Wood, Dr. Tucker's Reasons for Price Rigidity, *American Economic Review*, December 1938.)

¹⁵ Tucker, *op. cit.*

prices should be made more flexible so as to allow a laissez faire policy to work;¹⁶ others accept price inflexibility as largely inevitable and suggest that instead the fluctuations of flexible prices be somehow minimized, or that other techniques for insuring recovery and maintaining full employment be devised,¹⁷ including perhaps monetary controls.

Nor does any clear-cut solution seem, as yet, to be available. It is the purpose of the present chapter to present a brief survey of some of the aspects of this issue of price flexibility. It is designed as a preliminary exploration of the field rather than as a thorough analysis of the problem; it marshals the salient facts and suggests some of the attendant questions of public policy.

THE MEANING OF FLEXIBILITY

Any appraisal of the significance of price flexibility to the functioning of the economy must necessarily proceed from a definition of just what is meant by flexibility. The problem of definition may be approached in two ways; either by examining the external characteristics of price behavior only, or by considering such behavior in its relation to the nature of the economic forces to which prices may be expected to respond. Up to a certain point both approaches will lead to a similar separation of issues.

An examination of the behavior of many price series over a period of time may disclose four different kinds of movement:

(1) *Casual variation*.—An irregular, nonpersistent short time variation, following no clearly recurrent pattern, and unrelated to the movement of the general price index. For purposes of reference, this will be called casual variation.

(2) *Seasonal variation*.—A regularly recurrent pattern of variation with an annual periodicity. For example, successive years may show a fairly predictable fall in the price during the spring and summer, followed by a rise of similar proportions during the fall and winter. Such variation may be termed seasonal.

(3) *Cyclical variation*.—The behavior of the specific series in question will usually reflect, to a greater or less extent, the broad swings of the general price index. Thus most prices participated in the general price decline between 1929 and 1933, and in the general price upswing between 1933 and 1937. Such swings may be conveniently called cyclical.¹⁸

(4) *Secular variation*.—The series may have a specific, persistent long-term trend of its own, independent of the movement of the general price level, and extending over a considerable period of time. Such a trend is commonly termed "secular."

¹⁶ This viewpoint is advanced by Robbins, "In order that recovery may be assured and future dislocation minimized, it is necessary not only that flexibility should be restored to the prices of different kinds of labor but that flexibility should also be restored in other markets." (*The Great Depression*, MacMillan, 1935, p. 189.)

¹⁷ This appears to be the opinion of Means, "Finally, I want to make it clear that in pointing both to the fact and the importance of inflexible administered prices I am not saying that the inflexible administered prices are wrong. They seem to me inherent in modern technology. Nor am I saying that inflexible prices should have come down during the depression. According to the rules of the laissez faire game, they could not be expected to come down." (*Notes on Inflexible Prices*, loc. cit.)

¹⁸ This terminology does not necessarily imply any postulates regarding the nature of the business cycle.

Those kinds of price variation may be considered manifestations of similarly distinguishable economic forces. Thus casual variations reflect short-term changes in market conditions. Seasonal price movements grow out of concurrent regular fluctuations in demand or supply. The cyclical swings of a price series are the more or less direct consequences of, or accompaniments to, broad changes in the rate of general business activity. Secular trends are the expression of basic long-term modifications of such factors as production costs, consumer requirements, or market structures.

Where business policy decisions are a factor, the nature of the variation will be affected by the goals of business strategy. For example, prices may be varied over the short-term in order to obtain some immediate competitive advantage. Regular seasonal changes may be introduced for the purpose of maintaining uniformity of production schedules or shifting the burden of carrying inventory. The extent of cyclical variation—or its avoidance—may be governed largely by the effort to minimize losses during periods of severely curtailed demand. Over the long-term, price policies and the response of prices to changes in costs and markets may be governed by such factors as the relative emphasis upon large volume or unit profits, as well as by the rate at which it is considered expedient to replace old machinery and obsolescent methods by newer or more efficient equipment and techniques.

These four aspects of price behavior necessarily overlap, as do the forces to which they represent responsiveness. Nevertheless, it is possible to consider separately the economic consequences and problems of public policy flowing from each of them.

The precise role of casual price variation—responsiveness to forces which persist for not more than a few months at a time—is difficult to appraise. In some cases short-term price changes, particularly if they are considerable in extent, may have important consequences upon the amount and direction of spending and upon the use of productive resources. Thus sharp price increases, even though very temporary in character, which occur during the initial stages of recovery from depressed conditions may have very serious repercussions; this may have been true, for example, of the short-lived price increases during the late spring and early summer of 1933. Promptness of response to important changes in conditions may be important; thus immediate price reductions during the initial stages of recession may ward off the need for later and more drastic adjustments. In many cases, however, whether or not the price of a commodity remains at a stable level for a day, or a week, or even a month, or whether it fluctuates to a limited extent about such a level during this period, seems of minor consequence in its effects upon the orderly functioning of the economy.

In all probability, seasonal price variability is not a fundamental issue. Whether the course of any specific price is or is not subject to regularly recurring, predictable seasonal fluctuations is likely to have little ultimate effect either upon the total income of the producers of the commodity or upon the total amount which consumers must pay for it. In other words, seasonal price behavior can play no more than

a limited role in determining the distribution of purchasing power and of productive resources between various alternative uses.¹⁹

The significance of responsiveness of commodity prices to long-term or secular trends next arises. To what extent do the prices of different commodities reflect, over a period of years, changes in the costs of production due to technological improvements, to alterations in the character or availability of raw materials, to modifications in the nature of the labor supply, and so on? To what extent is the price of a commodity responsive to fundamental changes affecting its demand, as for example, changes in consuming habits or in standards of living, or possibly in the technical uses to which it may be put? These are questions of fundamental importance to the functioning of an efficient economic system. Price trends over the long term are the factors which ultimately determine the allocation of the nation's resources of men and materials to different uses, and the general standard of living and well-being of the community.²⁰ However, "sensitivity" or "flexibility" has usually been discussed in relation to short run and cyclical influences; consequently this question of responsiveness of commodity prices to long-term influences, despite its importance from the point of view of public policy, will not be considered at this point in the analysis.

Finally, there is the problem central to the present discussion; that is the degree to which specific commodity prices reflect the broad upswings and downswings of wholesale commodity prices in general. The problem may be formulated alternatively as one of price responsiveness to what are usually termed cyclical influences, that is, to major changes in the rate of business activity. It is this aspect of price sensitivity, particularly in relation to periods of downturn, which has been the focus of most discussion and analysis in recent years. It should be noted that economists have generally accorded emphasis to the behavior of prices during the great depression of the years 1929 to 1933 and also to their action during the recession of 1937 and 1938 and have given less attention to the behavior of prices in periods of

¹⁹ Generally speaking, those prices which show a regular pattern of seasonal variation are affected by one of two sets of influences. The first of these reflects natural forces over which man has little or no control, for example, seasonal changes in the production of such commodities as milk, or butter, or fresh vegetables. The prices of most of these products are higher in the winter than in the summer because of inevitable differences in cost, such as storage charges or extra transportation expenses. In such cases, therefore, price variation merely reflects seasonal variation in supply and in costs.

Another type of seasonal price variation results from the more or less deliberate policy of industry—frequently representing the crystallization of custom—designed to even fluctuations in demand, and perhaps to permit the industry to operate more efficiently. This is true, for example, in the case of anthracite coal, where rates are systematically lowered during the summer in order to stimulate purchases during what would otherwise be a slack period. This custom is designed to reduce the burden of seasonal inventory which the industry would otherwise have to carry. It seems quite probable that this kind of policy is reasonably calculated to improve the general functioning of the economy. In some cases, of course, a pattern of seasonal price variation which was originally well-grounded and economically desirable may become somewhat distorted because of the intrusion of irrational elements. The price of styled apparel, for example, seems to follow a fairly predictable seasonal pattern. Regardless of their original basis, however, seasonal changes in style, as they appear in our modern markets, seem to be far less matters of necessity than of custom. Frequently, the pattern has become quite illogical. The desire to be the first to display a new mode has been so exploited that seasons are rushed to a very marked extent. Spring apparel, for example, is regularly purchased in January, February, or March, rather than in April or May. As a result, cold weather in January, instead of stimulating the sale of winter apparel, may actually act as a deterrent to the production of spring lines.

There may be some industries which do not now reflect any distinct pattern of seasonal price variation and in which such variation might conceivably tend to stimulate sales during otherwise dull periods, thus permitting the more efficient use of productive machinery. For example, it is conceivable—though far from certain—that seasonal variations in the demand for, say, electric refrigerators might be reduced if prices were slightly lowered during the winter and correspondingly raised during the spring.

²⁰ Of course, the mere fact that the price movements of a given commodity adequately reflect secular influences is only one criterion. Responsiveness to change is no guarantee that the level may not, at all times be out of line.

recovery and boom, such as the years of the last war or the period 1922-29.

Striking differences are apparent in the behavior of prices of different commodities during these periods. For example, chart I depicts three distinct kinds of price behavior. The price of sulphur, it will be seen, proved to be entirely inflexible. It changed not at all from the year 1926 to the year 1938. In contrast, the price of wheat is typical of the behavior of most highly flexible prices. It declined sharply from 1929 to 1932-33, recovered rapidly until the spring of 1937 and then again declined sharply. Intermediate between these extremes is the price of brick, which may be classed as semisensitive. It responded to the general broad upswings and downswings of business but its response was far more limited than that of the price of wheat.

A few examples of the behavior of specific prices may illustrate the relationship between these four kinds of influences which affect prices, and indicate that price "flexibility," as such, can have no meaning unless its specific nature is considered.

Chart II shows monthly variations in the price of eggs in New York since 1926. Marked swings from month to month reveal sensitivity to immediate or casual market factors. A distinct seasonal pattern is also apparent, with lows in the spring and summer, and highs in the late fall and winter. Responsiveness to cyclical influences is reflected by a marked decline in price from 1929 to 1932-33 and again from 1936 to 1937. Finally, there seems to be a broad downtrend during the entire period; the recovery highs were distinctly lower than the corresponding predepression figures.

The price of cotton goods (chart II) exhibits a different pattern, though it, too, is usually classed as very flexible. It is highly responsive to cyclical forces and there is some evidence of a persistent long-term downtrend. On the other hand, casual variations are minor and there is no apparent seasonal movement.

Rayon (chart II) experienced a major secular downtrend between 1926 and 1932; during the latter part of this period the influence of the general cyclical recession may have been superimposed to aggravate the decline. Secular influences probably persisted to limit the extent of recovery between 1932 and 1937. A fairly sharp decline (22 percent) between 1937 and 1938 may well have been largely cyclical in nature concurrent with the general downswing of that period.

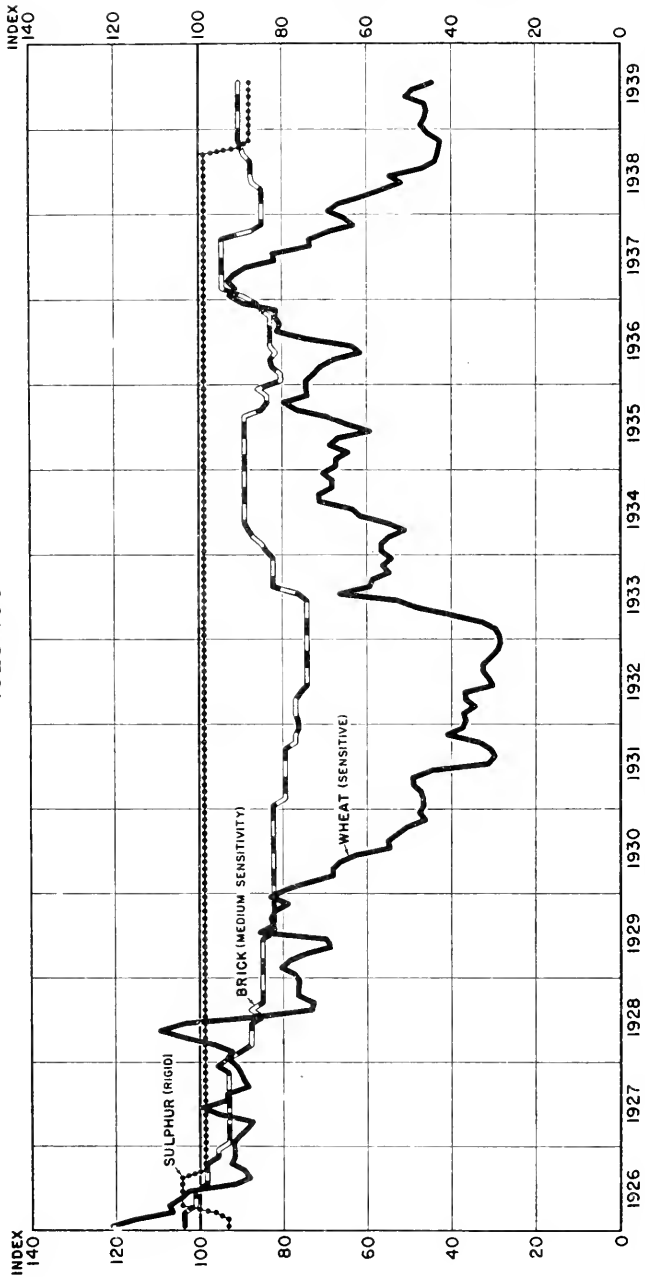
In some cases there may be marked secular movement with little if any sensitivity to the general level of business activity. Electric refrigerators, phosphate rock and potash salts (chart III) illustrate this situation. Yet these prices differ among themselves in other important aspects. Refrigerators had a sustained downtrend in price extending over many years, reflecting improved technology and widening markets. In contrast, price reductions for phosphate rock and potash salts were apparently averted for a long period, until at last the accumulated force of improved methods and lower costs was reflected in each case in abrupt price cuts of over 40 percent.²¹ None of these three commodities shows much casual variability, while potash salts displays a distinct and consistent seasonal pattern.

²¹ For a discussion of technological changes in the production of phosphate rock, see *Phosphate Rock Mining, 1880-1937*, Works Progress Administration, National Research Project, and Department of the Interior, Bureau of Mines. In the case of potash salts, new sources of supply were an important factor.

CHART I

SENSITIVE AND INSENSITIVE PRICES

1926=100



NOTE. THESE INDEX NUMBERS ARE BASED ON AVERAGES OF QUOTATIONS SECURED AS OF ONE DAY EACH WEEK

CHART II

WHOLESALE PRICES
OF SELECTED COMMODITIES

1926=100

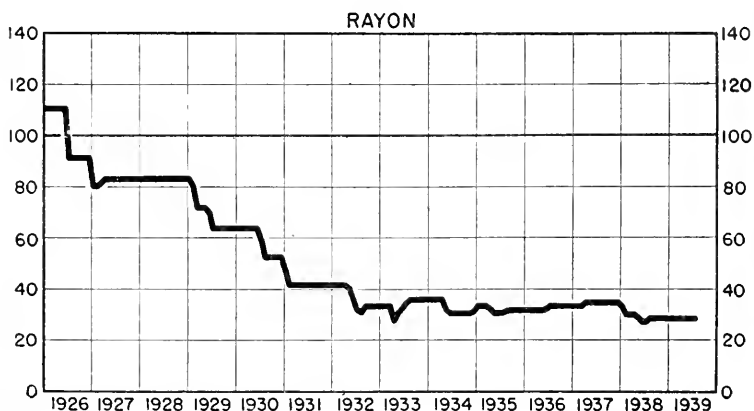
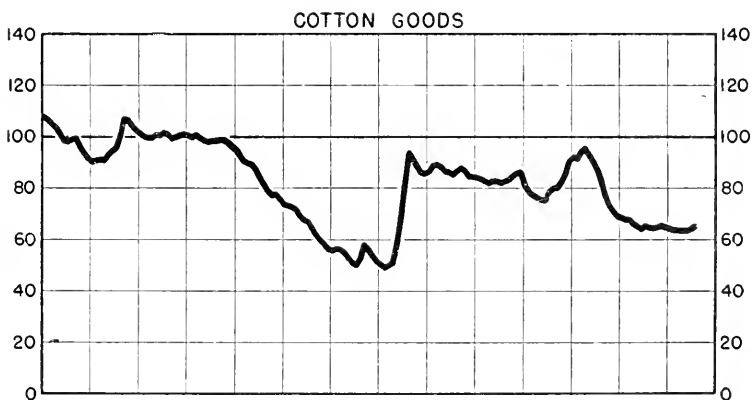
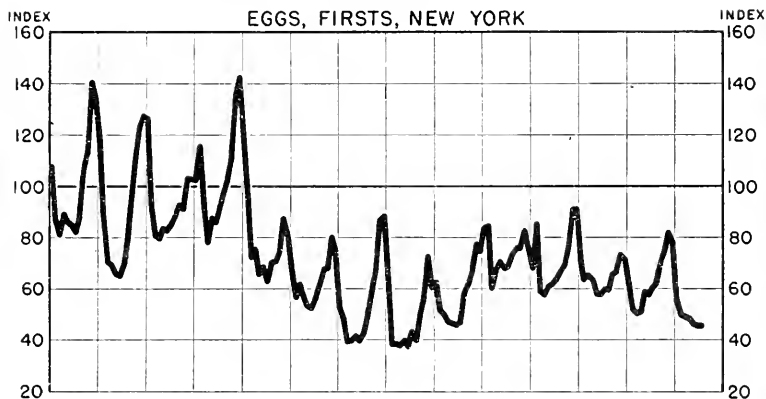
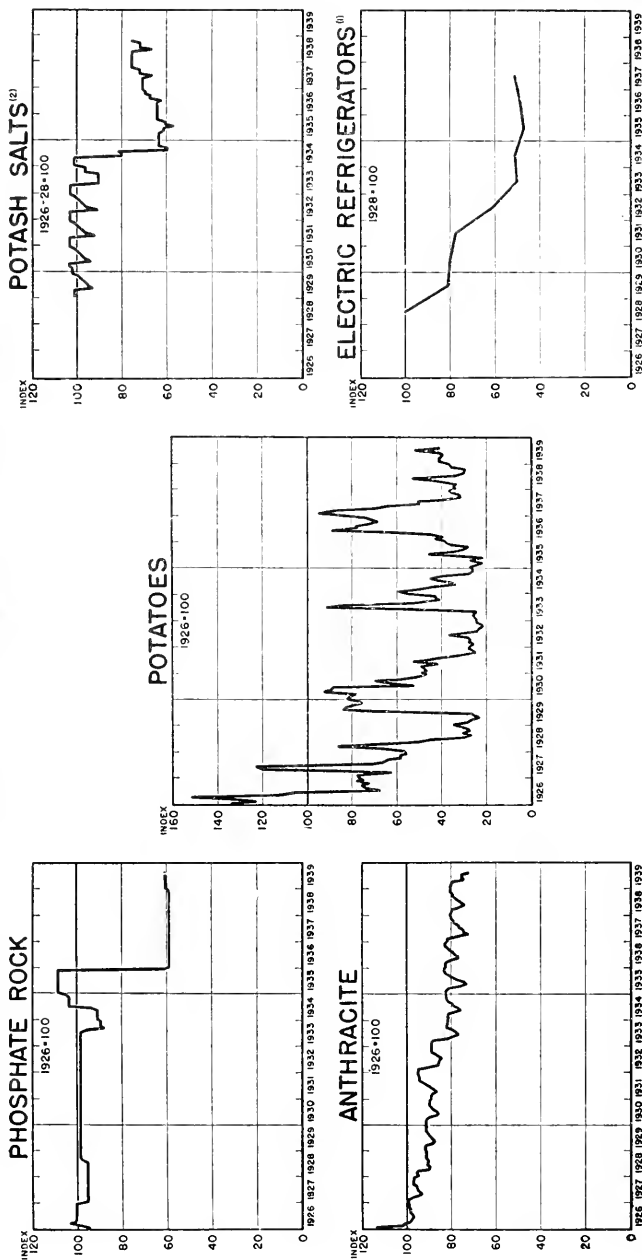


CHART III

WHOLESALE PRICES OF SELECTED COMMODITIES



SOURCE (1) NATIONAL ELECTRICAL MANUFACTURERS ASSN
(2) NATIONAL FERTILIZER ASSOCIATION

The price of anthracite coal (chart III) has remained within a much narrower range during the period between the summer of 1926 and the present time than any of the other prices shown. However, it shows many month-to-month changes and a distinct seasonal swing. Over the entire period, secular influences are revealed in a steady downtrend. Yet the depression as such seems to have had but little influence; the failure of prices to recover since 1933 makes it probable that the 1929-33 decline was part of a long-term readjustment rather than a specific response to the contraction of general business activity during that period.

Finally, the prices of some commodities are subject to such powerful specific forces that the influence of broader economic trends is completely overshadowed. This is illustrated by the price of potatoes (chart III). Between 1930 and 1933, potato prices roughly paralleled the behavior of other highly sensitive prices, although the downswing was somewhat delayed and the upswing extremely rapid. However, this parallelism may have been largely fortuitous; the chart shows at least three other price swings of approximately equal intensity which bear little or no relation to the trend of the general price level or to the rate of business activity.

These few illustrations indicate the need of relating the problem to a specific market setting. The economic significance of differences in sensitivity cannot be appraised until the question "sensitivity to what?" has been answered. Accordingly, it should be emphasized that the following discussion is concerned chiefly with the "cyclical" aspects of price behavior, or with the responsiveness of prices to broad changes in the rate of business activity.

THE MEASUREMENT OF PRICE FLEXIBILITY

The distinction between measures of behavior and of responsiveness.—Up to this point it has been possible to treat the problem alternatively as relating either to the external characteristics of price behavior, or else to the responsiveness of prices to market forces. However, when the possibilities of measuring flexibility are examined, it becomes necessary to distinguish between the two courses.

(1) The behavior of the price of any commodity can be considered in relation to the specific economic forces affecting its market.

(2) The movement of the price may be examined on a purely behavioristic level, independently of the specific forces affecting its market, but in relation to the pattern of behavior for other prices.

Of these two approaches the former is in many ways the more meaningful. The behavior of any price cannot be fully appraised except in the light of a detailed analysis of the factors affecting the market for that commodity. Although it is true that during major upswings or downswings of business the prices of almost all commodities are subject to forces acting in the same direction, the intensity of such forces varies very materially for different kinds of product. In some cases the specific forces may even overshadow the more general, causing anomalies of price behavior which cannot be explained by the examination of prices alone. Judgment as to what constitutes economically desirable behavior for the price of any commodity must,

therefore, be conditioned by the forces affecting its particular market, and cannot depend exclusively upon comparison with the course of other prices.

There is another important reason for measuring flexibility as a function of the factors affecting each individual market. Responsiveness to changing conditions often takes the form of modifications in the character of the product rather than in its price as such. A progressive improvement in quality is in some ways equivalent to a reduction in price. For example, there has been a marked improvement in the operating efficiency of mechanical refrigerators over a period of years. This is, in turn, reflected in a material decrease in current consumption per unit of refrigeration. If the consumer is interested in purchasing not a refrigerator per se but rather a certain amount of refrigeration, this improvement in efficiency cannot be ignored. In other cases quality betterment or quality degradation may not be as readily translatable into price terms, but these changes are nevertheless significant. Consequently it is only part of the story to say that a price is "rigid" merely because it shows little change in level, without first examining modifications in the product itself.²²

However, there are very serious practical difficulties in the way of developing the sort of relational measures of flexibility which are implied above. An analysis of the relevant market factors, product by product, for all the items included in the Bureau of Labor Statistics wholesale index, for example, or even for a properly representative selection of such items, is a herculean undertaking. Such studies would have to go far beyond the scope usually assigned to investigations of sensitivity. Thus chapter IV of this report contains an extended analysis of the markets for electrical household equipment; yet much more data would be needed as a basis for appraising the price responsiveness of the products considered. Moreover, it is not at all certain that statistical techniques could be devised to express such analyses in uniform quantitative terms which would permit a comparison of the results for different kinds of products.

For the time being, therefore, and because most of the discussion of the subject has followed similar lines, the alternative procedure has been adopted in this chapter; that of measuring price flexibility by examining the behavior of prices without reference to the specific market forces at work, but in relation to the behavior of other commodity prices. The significance of such measures is twofold. Similarities or disparities in price behavior have important economic significance and consequences in their own right. For example, they exert a marked effect upon the exchange relationships between different groups of producers. Thus diversities in trend between the prices of farm products and manufactured goods directly influence the effective purchasing power of farmers. Such effects may be inferred from an examination of how prices act without reference to why they so act.

Secondly, during broad upswings and downswings of business the prices of most commodities are subject to powerful forces acting in the same direction; for example, almost all markets experience a curtailment of demand during recession and an expansion of demand during recovery. To the extent to which there is such similarity

²² The relationship between price and quality changes is discussed at more length in ch. III of this report—Nonprice Competition.

between the forces acting upon the prices of different commodities, price behavior as such may be considered a guide to price responsiveness.

Almost all of the efforts which have been made thus far to prepare statistical analyses of price flexibility have been content with this sort of external approach. Measures have been applied to each price series without relation to the specific market factors affecting its behavior. Thus the frequency with which different prices changed and the relative extent of their declines during the depression of 1929-33 have been compared directly without any correction for differences in basic market characteristics. Because of the importance attached to them in current analysis the different forms of such measures are examined in detail below. The limitations just discussed apply to all of them and must be constantly borne in mind in their interpretation.

The specific measures utilized.—There are three general criteria of flexibility which have been applied to prices.²³ These are—

- (1) The frequency of price movement.
- (2) The amplitude of price movement.
- (3) The timing of price movement.

All of these have been utilized at various times in previous studies of price behavior. Before describing these, and other measures which have been developed in the course of the present study, it is pertinent to examine the economic significance of each.

The frequency with which any particular price changes (e. g., the number of monthly quotations which show changes from the immediately preceding monthly quotations during a given period—see criteria A and B, appendix I)—has restricted usefulness as a measure of flexibility. Assuming the accuracy of the data, it may serve as some index of the responsiveness of the price to casual, very short-term forces.²⁴ To an extent it will also reflect seasonal variations. However, the very fact that this measure reflects both casual and seasonal variations limits its value as a measure of either separately. Frequency of change is obviously unsuited to measure seasonal flexibility because of the extent to which it is influenced by casual movements. Conversely, regular seasonal fluctuations in the price of such commodities as anthracite coal or potash salts result in a fairly high frequency of change in their monthly price quotations; yet their sensitivity to casual market factors is but slight. Conceivably, the use of seasonally adjusted indexes might compensate for the latter defect.

²³ The principal statistical measures of price flexibility which have been devised are presented below under the names of their formulators:

Frederick C. Mills.—Frequency of Change; Amplitude of Movement; Measure of Price Dispersion; Measure of Displacement; Timing of Cyclical Phases.

Gardiner C. Means.—Frequency of Change; Amplitude of Change (Percent change 1929 to 1932); Deviation Measured from Trends (Average 1929-37) to 1932.

Gerhard Tintner.—Frequency of Monthly Price Changes; Amplitude of Change; Response to the Average Cyclical Movements.

Edward S. Mason.—Average Amplitude of Price Change (by 8-year periods).

Don Humphrey.—Frequency of Price Change; Amplitude of Change.

²⁴ Limitations related to the time intervals for which data have been tabulated must not be ignored. Thus, if frequency is based upon a comparison of successive monthly prices, it will be difficult or impossible to distinguish between those prices which change from minute to minute, such as wheat or cotton, and those whose level usually remains stable for days or perhaps weeks, such as print cloth. Yet these two are in many ways different kinds of markets.

Frequency of change,²⁵ then, measures directly only sensitivity to short-term influences; not to cyclical or secular forces. It is of value in analyses of the latter only to the extent to which correlations between these different aspects of sensitivity may be found to exist.

The measurement of cyclical flexibility may be approached directly by examining the extent to which particular prices changed during periods of general business upheaval. The percentage by which prices declined from 1929 to 1932-33, the percentage of recovery from 1932-33 to 1937, or perhaps a combination of both these movements would fall into this class. (See measures C to I in appendix I.) Here again there are certain complicating factors other than those inherent in the character of the data. One of these is the fact that secular trends may be operating during the particular period investigated with the result that cyclical movements are exaggerated or perhaps obscured. Thus, to attribute the sharp decline in the prices of electric refrigerators or rayon during the depression purely to the influence of the drop in general business activity would ignore the influence of powerful technological forces and widening markets to which the behavior of these prices seems largely attributable. Nor can the effect of seasonal forces be neglected. For example, in the case of eggs the difference between the 1929 high and the 1933 low is attributable in good part to normal seasonal variation; cyclical factors account for only a part of the movement. Moreover, other specific market forces are often present; the influence of a drought, a bumper crop, or a war scare might affect any computation designed to determine the sensitivity of agricultural products.

Probably seasonal variation could be allowed for,²⁶ but it is difficult to devise techniques to compensate for secular or short-term forces of the kind described.

The timing of price movements, e. g., the month during which a sustained uptrend or downtrend began, is adapted to measuring certain aspects of cyclical flexibility (see measures J to L, appendix I). However, the apparent speed of response may again be obscured by noncyclical factors; secular, seasonal, or even casual.²⁷

The reliability of all of these measures of flexibility is of course conditioned by the accuracy of the data upon which they are based. The Bureau of Labor Statistics indexes of wholesale prices have been very generally utilized in computations of this kind. Limitations on their validity for this purpose have been recognized by the Bureau and have also been analyzed by the National Resources Committee²⁸ in connection with its inquiries into prices. It has been pointed out that price changes are not always fully or promptly reported. The

²⁵ In all this it is assumed that frequency of change is measured for reasonably short time intervals—e. g., not exceeding monthly. Obviously frequency computed for, say, yearly intervals would have a quite different meaning.

²⁶ This might be done by comparing annual average prices only, or by basing the measure upon the same month of each year, or by introducing a seasonal correction into the price index. Two such measures have been developed in the course of the present study and are presented in appendix I (measures H and I).

²⁷ It is also possible to devise measures which combine two or more of the above criteria. For example if all the changes in price experienced by a commodity during a given interval be added together (regardless of whether any specific movement be up or down) the result is a measure of aggregate movement which includes elements of both frequency and amplitude (measure N, appendix I). Another possibility is the computation of the average amount by which a price changes, when it does change (measure M, appendix I). Such measures as these seem most closely related to responsiveness to casual, or seasonal forces. They are, however, also subject to the same general kind of objection that it is difficult to distinguish between diverse overlapping movements.

²⁸ *The Structure of the American Economy*, pt. I, National Resources Committee, June 1939, appendix I, pp. 173-185.

frequency of price change for many commodities is materially greater than would be inferred from an examination of successive nominal monthly quotations. Measures of amplitude are subject to the difficulty that price reductions during depressions often take the form of secret rebates or indirect concessions, rather than of outright cuts in quoted prices.

It seems apparent, therefore, that measures of flexibility based upon comparisons of price quotations must not be regarded as mathematically accurate. The overlapping influences to which prices are subject and the difficulties in the way of obtaining accurate price quotations constitute serious obstacles to their reliability. Nevertheless, some of the statistical relationships observed in an analysis of these measures are so marked and so consistent that they cannot be considered purely fortuitous.

MEASURES OF FLEXIBILITY COMPARED

Currently, a great deal of attention has been devoted to the frequency of price change as a correlative of cyclical flexibility.²⁹ As pointed out earlier, frequency of price change is not of itself a direct measure of responsiveness to cyclical influences. However, there seems ample evidence that those prices which change most frequently also tend to decline farthest during a depression, and that those which change least often, usually remain most stable.

Much of the work in this field has been done by Gardiner C. Means. In a report prepared for the Secretary of Agriculture and published as a Senate Document,³⁰ he examined 750 of the Bureau of Labor Statistics indexes of wholesale prices: These items were divided into 10 groups depending upon the frequency with which monthly price quotations changed. Average monthly prices for each of these groups were computed and a fairly consistent relationship demonstrated between frequency of price change and the extent of decline during the 1929-33 recession.

Subsequently, the analysis was refined and carried further. The National Resources Committee study of *The Structure of the American Economy*³¹ depicts the average price trend for five frequency groups for the period from 1913 to the present. The correlation between frequency of change and amplitude of cyclical movement holds for the upswing from 1933 to 1937 and for the 1937-38 downswing, as well as for the initial depression break. It is also apparent, though to a lesser degree, for price movements during the war boom of 1915 to 1919 and the subsequent primary deflation of 1919 to 1921.

In the course of the present study exploratory work was also done in the direction of developing alternative measures of flexibility. Various criteria were employed; some relating primarily to shorter term factors and others designed to reflect the impact of cyclical forces. They included frequency of change, aggregate movement and average amount of price change during a period of relatively high business

²⁹ An exhaustive statistical study of the relationship of price movements to the business cycle, which includes data on price movements for the United States, England, Germany, Holland, Austria, and Russia, is to be found in the Austrian publication, *Prices in the Trade Cycle, 1935*, by Gerhard Tintner, translated and obtainable from G. E. Stechert & Co., New York City.

³⁰ S. Doc. No. 13, 74th Cong., 1st sess., *Industrial Prices and Their Relative Inflexibility*, January 17, 1935.

³¹ Op. cit., p. 146.

activity (1926-29); several measures of amplitude of swing between 1929-33-37; and timing of price change at three critical turning points. These are described in detail subsequently. Comparison of the results derived shows again that all of these measures are distinctly related (see appendix I). In some cases the correlation is higher than in others, but the evidence seems sufficient to demonstrate the point. It may be assumed, therefore, that there are certain underlying influences whose effect upon the responsiveness of prices to different kinds of forces shows a degree of consistency regardless of the measures applied.

A particularly striking relationship is observed between frequency of price change and amplitude of cyclical movement. (The Pearsonian coefficient of correlation between these two measures for 615 price series is $+ .77$.)³² It may be inferred, consequently, that sensitivity to cyclical forces is distinctly related to sensitivity to shorter term, casual influences.³³ This conclusion holds despite the fact that none of the measures used can be trusted to portray the effects of either of these factors exclusively.

FACTORS AFFECTING PRICE BEHAVIOR

The explanation most frequently advanced for this relationship between frequency and amplitude of price movement draws upon the distinction between "market" and "policy influenced" prices made earlier in this chapter.³⁴ It has been pointed out that the behavior of prices is importantly influenced by the role which policy decisions play in their determination. Gardiner Means showed that if all wholesale price series are grouped in accordance with frequency of price change, a marked U-shape distribution results; that is, on the basis of this measure they are either highly flexible or quite inflexible. The great bulk of the series changed either less than 24 times or more than 80 times during the 96-month period upon which the comparison was based. In other words, the price quotations of most commodities change either once or more almost every month or else not oftener than three times per year.

This tendency of prices to vary either very often or rarely is striking, even after all due allowance has been made for the inherent inaccuracies of the data. Two essentially different kinds of price behavior seem involved. It may be reasonably inferred that most prices whose quotations change at short intervals are of the "market dominated" variety and that those whose frequency of change is at the other extreme are, to some extent, affected by price policy decisions of individual firms or groups of firms.

In other words, there is a strong presumption that a price which changes infrequently is a "policy influenced" price. If the rigidity is extreme, the presence of monopoly or of monopolistic practices may be suspected. However, there is no necessary relation between price rigidity and monopoly, if "monopoly" is used to denote collusive or coercive devices for restraining competition, or the complete domina-

³² See appendix I, p. 170. The criterion of frequency is the one developed by the National Resources Committee; that for depression sensitivity was developed by the present study. The former relates to the number of monthly changes between 1926 and 1933; the latter to amplitude of movement between 1929-33-37.

³³ This assumes a degree of similarity between the cyclical forces acting upon different products. During a movement so broad as that between 1929 and 1937, however, such an assumption seems warranted.

³⁴ See pp. 13-15.

tion of a market by a single concern. While there is a distinct tendency for prices subject to such monopolistic controls to change infrequently, it by no means follows that prices which change infrequently are necessarily monopolistic. Moreover, elements of monopolistic control (still used in the sense above specified) may be present even though the pattern of price behavior is of the kind usually associated with market domination.

It may clarify the issue to allude briefly again to the influence of product standardization upon price behavior.³⁵ Some commodities—e. g., electrolytic copper, pig iron of a defined composition, 66° sulfuric acid—are of such character that the buyer has little or no reason for preferring the product of one seller to that of another; the same observation applies to commodities purchased on specifications. Under such circumstances, appreciable price differences between rival sellers in the same market cannot long exist. This applies with particular force to nominal or published price quotations. Secret rebates or concessions may be overlooked; but any open price cut made by one seller is almost inevitably met by his competitors in short order.

In commodities of this kind, if price quotations remain stable for extended periods, it may be reasonably assumed that all competing producers are avoiding price changes, at least nominally. This commonly reflects the existence of some kind of *modus vivendi* in the industry, whether it be based upon the domination of a single concern or upon coercion, collusion, or price leadership.

In the case of differentiated products, where the merchandise offered by competing sellers is not readily interchangeable, buyers are accustomed to distinguish between the commodities offered by rival sellers. Whether buyer preference be based upon intrinsic physical differences or merely upon intangible factors such as brand prestige is not material to the discussion. The important point is that factors other than price are involved in the buyers' selection. Under such circumstances, each seller is to some extent relieved from the necessity of meeting immediately every change in the prices quoted by his rivals. The precise degree of this immunity necessarily varies with a large number of factors, such as the nature of the commodity, the relative ease or difficulty which buyers face in making objective comparisons between competing items, the extent to which an advertising campaign has been successful in persuading the public of the unique qualities of specific brands, and so on. Moreover, the immunity is never more than partial. If price differences between similar items become excessive, buyers will ultimately tend to shift their patronage.³⁶ Nevertheless, it is apparent that each seller may, for months or longer, ignore changes in his competitors' prices. Consequently, infrequent price changes for products of this kind do not necessarily carry the same implications as those suggested for standard commodities. A *modus vivendi* may exist, but the apparent price behavior is quite compatible with its absence.

Frequency of price change, then, is not only a direct measure of sensitivity to casual market influences, but also a symptom of the relative influence of immediate market conditions and of price policy

³⁵ Although this point has already been considered (See ch. I, pp. 6-8), it is reviewed here for clarity.

³⁶ Yet in some fields, the tolerance is very great. Thus widely advertised drug products frequently sell for three to five times as much as their unadvertised equivalents and sometimes the differential is even wider. See for example pp. 80-81 and also pp. 368-379, below.

decisions upon the manner of price determination. This may throw some light upon the correlation previously referred to between frequency of change and cyclical price sensitivity. In *very general terms* it may be assumed that prices with high frequencies of change, whose movements closely follow the shifting moods of the market, declined furthest during the depression and rose most during recovery. Prices whose infrequent changes reflect some degree of latitude in price policy formulation, declined on the whole less sharply and rose less abruptly.

However, this generalization is subject to numerous exceptions. If the Bureau of Labor Statistics wholesale price series be ranged in order of percentage of decline during the depression, the result is a continuous distribution. This contrasts with the sharp discontinuity of distribution observed in the frequency analysis. It is clear that there are not two distinct classes of price responsiveness to cyclical influences, but rather an insensible gradation. Specific conditions may even cause flexible prices to move against the general trend. Thus, hops³⁷ whose price may be classed as "market determined," showed material price increases between 1929 and 1933, while the price of potatoes—also a "market" price—showed only a slight decrease. In contrast, many prices normally classed as "policy influenced," e. g., petroleum and carbon black, showed very sharp declines during the same period.

The tendency of the "administered" groups of prices to decline less sharply during the depression than the "market-dominated" prices, to the extent to which it holds, is due to a wide variety of factors. These have been the subject of much attention during recent years and are far too numerous and complex to discuss here in detail. They are summarized below.

(1) To some extent "market" prices on the one hand, and "administered" prices on the other, relate to different kinds of commodities. The former are typical of raw materials and particularly of agricultural raw materials, while the latter are more commonly associated with manufactured products. It has long been observed that the price of raw materials tends to fluctuate somewhat more widely than is true of manufactured products. Many explanations have been suggested; some emphasizing differences in cost structures, while others contrast the large number of farmers selling any specified product with the more concentrated industrial markets.

Thus, it is frequently contended that the prices of manufactured goods are relatively rigid because their costs of production contain a larger proportion of inflexible cost elements (e. g., labor, interest, depreciation) than is true of agricultural products. Moreover, for the small-scale farmer the cost of labor may represent to a considerable extent the cost of his own and his family's efforts rather than actual money expenditure. However, this explanation does not appear adequate. The farmer is by no means free of inflexible cost elements; mortgage payments and taxes are obvious examples. It seems much more significant that the manufacturer is freer to express his costs in a price policy, whereas the farmer within a given season can do nothing but harvest his crops, if they will yield anything beyond the cost of

³⁷ The very sharp increase in the price of hops during 1933 probably reflected the legalization of beer, but even the 1932 level was higher than that prevailing in 1929.

harvesting. It may well be, therefore, that too much stress has been laid upon the nature of manufacturing costs as an explanation of the relative inflexibility of the prices of manufactured goods. For any particular commodity at any given time, the relationship between costs and prices is far less precise and immediate than such reasoning would imply. In the first place, it is rarely possible to determine with accuracy exactly what the cost of producing a given article is. In most industries there is a large proportion of indirect or overhead costs, whose computation and allocation to specific products involves a large number of assumptions. An outstanding problem arises from the fact that costs vary sharply with sales volume. Consequently, any calculation of costs must start with an estimate of what sales will be and it is obvious that any estimate of future sales may vary widely from reality. If sales are larger than expected, the calculated cost may materially exceed the actual; if sales fall short of the estimate, the calculated cost will be too low. Moreover the price charged will itself affect costs, since a lower price may stimulate sales and thereby result in cost economies. In short, cost accounting is not an exact science and cost estimates are only one of the elements which a concern must consider in framing its pricing policy.³⁸ Rigid prices cannot be explained simply by referring to "rigid" cost structures.

(2) Those sellers or groups of sellers who have a degree of freedom in determining price policies are necessarily guided largely by considerations of individual advantage. Their primary concern as businessmen is with their own profit prospects; they cannot be expected to weigh the effect of each of their actions upon the general economy. Then, too, dictates of immediate expediency often outweigh longer term considerations, particularly during periods of acute stress. Stable prices have many apparent advantages; not only to sellers but often to industrial buyers as well. Planning is facilitated. The mechanical cost of announcing a price change for products having a wide distribution is often a serious deterrent.³⁹ Moreover, there is a fear that prices, once reduced, are difficult to raise again when conditions alter; buyers may protest less against a stable price than against a ten percent increase, following a ten percent cut.

(3) In general, the individual seller can expect to benefit from a price cut only if the volume of his sales is thereby increased by an amount sufficient to augment his net profits or reduce his loss. This postulates a very considerable increase in consumption as price declines—e. g., a high degree of elasticity of demand. There are many industries in which consumption does not increase materially when price declines—i. e., demand is notably inelastic.⁴⁰ This is

³⁸ The difficulty of determining price on the basis of cost computations was amply demonstrated under N. R. A. Many codes contained provisions prohibiting sales below cost but the complexities involved in measuring costs precisely made it necessary to resort to highly arbitrary definitions of cost elements in order to render enforcement practicable. Where such arbitrary definitions were rejected by N. R. A. officials, the code provisions became virtually meaningless.

³⁹ J. K. Galbraith quotes an observation made by Means to the effect that the expense involved in making a price change under modern conditions is an incentive to holding price constant. "A concern with National sales outlets must make certain that dealers are informed of the change; it must distribute new price schedules and provide safeguards against 'leaks' as well as risk a temporary cessation of business in case there is such a 'leak.' It must also recast its advertising to acquaint the public with the change. All of these things cost money and all of this expenditure is avoided if prices are allowed to stay where they are." (J. K. Galbraith, loc. cit., p. 470.)

⁴⁰ The demand curve for individual concerns may, of course, be quite elastic in the sense that material shifts in patronage can be induced by cutting prices below the level quoted by competitors. However, there is a tendency among businessmen to consider such advantages purely ephemeral, because of the probability that such reductions will almost immediately be met or bettered, with no significant increase in volume for the industry as a whole. Consequently, for some purposes, elasticity as related to the total market for a product is more significant than elasticity for the individual concern.

true particularly of those industries whose product is merely a minor component part of a finished article manufactured by others, of whose total cost they comprise but a small part. Thus the consumption of cement depends upon the rate of construction activity, the demand for spark plugs is dependent upon the sale or use of automobiles, and so on. Consequently an isolated change in the price of such commodities cannot be expected to exercise any appreciable influence upon their demand. Sometimes price reductions may even cause buyers to postpone purchases in the hope of further reductions and reduce the volume of activity until price stability is achieved. It may be true, however, that businessmen as a group tend to underestimate the degree of elasticity characterizing their respective markets. In any event when purchasing power is curtailed during a depression, businessmen are likely to favor maintaining price as the technique best adapted to minimize losses. The reduction of prices in an effort to increase volume often seems to them as, at best, an uncertain adventure at a time when undue hazards should be avoided.⁴¹

(4) The propaganda conducted by trade associations and others to convince businessmen of the undesirability of cutting prices has undoubtedly affected business psychology.⁴² Price cuts are often shunned as unethical even when material advantages can be anticipated from a lower price level.⁴³ (This does not relate only to the ephemeral advantages which a firm might obtain by cutting prices before its competitors, but also to those which might be retained after competitors had adjusted their prices to the new level.) Such price cutting as does take place usually takes the form of more or less secret

⁴¹ T. J. Kreps suggests three reasons explaining why "rigid prices are the easiest prices." (1) "By changing and especially permitting prices to be lowered, producers increase the risk that someone will try to 'get the jump' on the rest and attract customers by lowering or not raising prices with ensuing damages to the profits of all far greater than the temporary losses caused by restricted sales at maintained prices." (2) "If the number of sales outlets is large, the complexities of introducing price changes and of getting them accepted by the buying public, in addition to the distribution of new price schedules, will cost money and bother so easily saved by 'letting good enough alone.'" (3) "Sound business policy demands that producers, especially in periods of slack demand, minimize their risks and conserve their working capital. Acceptance of low sales volume is not only easier but may mean smaller inventory losses due to fluctuating prices." (*Economic Problems in a Changing World*, a symposium, Farrar & Rhinehart, 1939, pp. 281-282.)

⁴² Notice of this propaganda and dissent to it was recorded in a recent issue of the business journal, *Advertising and Selling*.

⁴³ During the past few months a number of business papers and trade associations have conducted a campaign against manufacturers and middlemen who practice price cutting.

"It must be admitted, from the immediate point of view, that this campaign may prove profitable. It may slow down price declines and thus allow sellers an opportunity for gradual liquidation of their stocks at higher prices. Any such campaign, however, is definitely to be condemned from the social point of view and even from a long-run view point of manufacturers and middlemen.

"In view of increasing unemployment and wage cuts, the maintenance of prices at the present time must mean a further decrease in the consumption of goods. This in turn will lead to a further contraction in employment—this to a still greater fall in consumption—more unemployment—and so on.

"The present pleading to maintain prices is a clear cut expression of the policy of industry to adjust itself to decrease in demand by cutting production rather than by reducing prices. Such a policy leads to a longer period of economic maladjustment—and hence creates a longer period in which the businessman may lose money. If persisted in, it may lead to as complete a break-down as in 1932.

"It needs to be emphasized that it is the price cutter who is paving the way to recovery. He is putting merchandise on sale at prices the public is willing and able to pay. This not only encourages more consumption but an immediately higher standard of living. It also results in reduced inventories in the hands of retailers—which, in turn, depletes inventories in the hands of wholesalers and manufacturers. . . .

"For a real recovery, purchasing power must arise out of production rather than out of Government spending. The price policies adopted by manufacturers, wholesalers, and retailers over the next few months will have much to do with how far the Government will be forced to go with its spending program to stimulate buying. Businessmen profess to fear Government spending. If they want to stop it, let them adopt adequate price policies. At the present time business leaders might clear the stage for such policies by checking indiscriminate condemnation of the price cutter. They might even find it for their long-run advantage to adopt price cutting themselves." (*Advertising and Selling*, June 1938.)

⁴³ This attitude relates primarily to price cutting for the purpose of obtaining some immediate competitive advantage, and not to price reductions reflecting cost economies due to such factors as changes in technology. The latter variety of price reductions are generally considered perfectly ethical.

concessions. When price competition cannot be avoided, this form seems to be considered more desirable than one in which the nominal quotations are affected. It probably has somewhat the same advantages which the undeclared war has in international politics. It is simpler to restore normal conditions when the fray has subsided; the subsequent elimination of unofficial concessions is likely to meet less buyer resistance than an increase in the nominal quotation.⁴⁴

PRICES AND PRODUCTION

For such reasons as those just discussed, price reductions during periods of depressed business activity are likely to be materially smaller in those industries in which individual sellers are able to exert some voice in determining the course of prices, than in those in which immediate market influences are the dominant factor.

In appraising the consequences of this behavior, there is probably no single phase which has been the subject of more discussion and controversy than its effect upon production during periods of economic recession. Basically, the issue is drawn in these terms. When for any reason purchasing power is severely curtailed, the market must make some adjustment to the reduced amount of dollars available for expenditure. This adjustment will take the form partly of reductions in price and partly of contraction in sales. These two adjustments may be considered complementary. If the amount available for expenditure at any time be considered constant, then *for the economy as a whole* it follows that a smaller adjustment in price will require a greater adjustment in output.

As a very broad generalization, subject to allowance for such factors as changes in the amount of hoarding, this is undoubtedly true. In discussions of price flexibility, however, the issue is usually formulated in much more specific terms. It is argued that rigidities in certain areas of the economy cause the burden of adjustment in those areas to fall heavily upon production; that is, that the output of such commodities, and employment opportunities in their production, are curtailed much more sharply than would be true if their prices were more flexible.⁴⁵ However, this point of view has been vigorously challenged. It has been contended that price-production relationships are not as simple as this, and that during a severe depression the consumption

⁴⁴ This has recently happened, for example, in the steel industry. During the spring and summer of 1939 concessions estimated to average \$6 per ton had been widely granted; after the outbreak of war in Europe these concessions were withdrawn, resulting in an important increase in actual prices paid for steel. Yet the companies in the industry were able to announce that price quotations were unchanged and thereby to escape much resistance and criticism.

⁴⁵ Thus, according to Gardiner C. Means, "One can make the broad generalization, having of course many exceptions, that for industries in which prices dropped most during the depression production tended to drop least, while for those in which prices were maintained the drop in production was usually greatest. Indeed, the whole depression might be described as a general dropping of prices at the flexible end of the price scale and a dropping of production at the rigid end with intermediate effects between"

"The adjustment of production instead of price in the inflexible areas aggravates the initial price adjustment in the flexible industries by reducing purchasing power and throws the burden of further price adjustment on the flexibly priced commodities. This situation can be clearly seen in the effect of the depression upon agricultural prices and the destruction of the price relationship between agricultural and industrial goods. It is also seen in the fact that during the depression the total income of all farmers and the total income of all industrial workers dropped in approximately the same proportion, but the drop in farm income reflected a drop in prices while the drop of workers' income reflected primarily loss of employment." *Industrial Prices and Their Relative Flexibility*, op. cit., pp. 9 and 25.)

of many commodities would be stimulated little, if at all, by further price reductions.⁴⁶

When the relationship between prices and production declines during recession is examined commodity by commodity, no strikingly consistent trend is revealed. Chart IV illustrates this relationship for 111 commodities⁴⁷ for the 1929-33 downturn. The percentage change in average annual price for each of these products is plotted against percentage decline in production, adjusted for imports and exports. The three sections of the chart distinguish between products on the basis of durability, showing three categories of goods—durable, semidurable, and nondurable.

An examination of this chart reveals the following relationships:

(1) Considering all the commodities together, there is some tendency for small declines in price to be connected with large declines in production and vice versa. (The Pearsonian coefficient of correlation is -0.32 ; the standard error of this coefficient is 0.09 .)

(2) For nondurable goods alone there is a similar broad tendency. (The coefficient of correlation is -0.44 ; standard error 0.12 .)

(3) For durable goods and semidurable goods considered separately, there is little if any evidence of such a relationship. (Coefficients of correlation are -0.12 and $+0.01$ respectively; standard error in each case 0.18 .)

(4) There was a marked tendency for increasing durability to be associated with smaller declines in price and greater curtailments of production. As shown by the following table, the median price decline for nondurable items was substantially greater than for the durable. The six-percent curtailment in production for the former group contrasts strikingly with the 61-percent curtailment for the latter.

TABLE 1.—*Median change in price and quantity available for consumption 1929-32, for 111 commodities, classified according to durability*

Type of commodity	Number of items	Price	Production
Durable.....	31	-21	-61
Semidurable.....	32	-27	-16
Nondurable.....	48	-33	-6

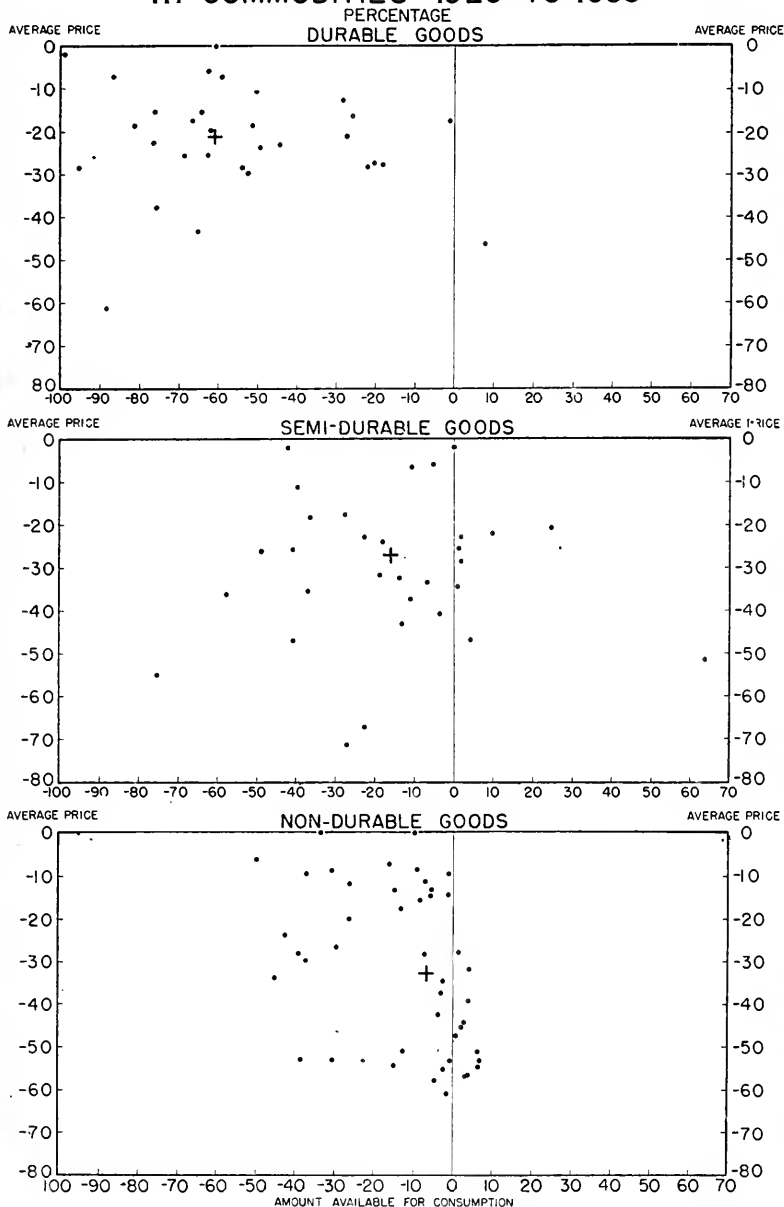
⁴⁶ This point of view is expressed in a recent bulletin of the National Industrial Conference Board:

"An analysis of the available data indicates that no simple and clear cut relationship prevails between specific commodity price and production changes. Within very broad limits there is evident some tendency for inflexible-priced products to be accompanied by greater decreases in production than those which were more responsive to the impact of outside forces. But the relationship is not so close, nor so surely accounted for, as to warrant the general conclusion that sharp reductions for particular inflexible prices would have been effective in maintaining demand, and hence the output, for these products. Certainly it seems unlikely that this result could have been achieved in connection with capital goods, the demand for which is determined largely by the outlook for future profits rather than by the current cost of new capital equipment—especially during times of depression when the demand schedule for such goods becomes extremely inelastic. That factors other than price may be of paramount importance is indicated by the tendency for durable goods to record the larger declines in production and for nondurable goods to show the smaller declines, regardless of the respective changes in price. The postponable nature of the demand for durable goods is a familiar phenomenon which furnished a more logical explanation for the production behavior of many goods than does the extent of price decline." (Price Flexibility and Changes in Production, Conference Board Bulletin, vol. XIII, No. 5, February 20, 1939, p. 51.)

⁴⁷ The following basis was used in selecting these 111 commodities. The three most heavily weighted items in each Bureau of Labor Statistics wholesale price subgroup were taken, except for some subgroups in which data were available for only one or two commodities. The purpose of this procedure was to insure a fairly representative sample covering all the sectors of industry for which wholesale price data were available.

CHART IV

CHANGE IN AVERAGE WHOLESALE PRICE AND QUANTITY AVAILABLE FOR CONSUMPTION 111 COMMODITIES-1929 TO 1933



+ INDICATES THE POSITION OF THE MEDIAN CHANGE FOR EACH GROUP OF COMMODITIES

SOURCES PERCENTAGES COMPUTED BY THE BUREAU OF LABOR STATISTICS AND THE BUREAU OF AGRICULTURAL ECONOMICS FROM DATA COLLECTED BY THESE AND OTHER GOVERNMENT AGENCIES

U.S. BUREAU OF LABOR STATISTICS

Great caution must be used in inferring any causality from these relationships. The fact that there was a tendency for production to be curtailed more sharply for those commodities whose price declined less, does not necessarily imply that production fell *because* prices were maintained. Conversely, the fact that for durable goods (or equally for semidurable goods) taken as a separate group, there was no appreciable correlation between price and production for individual commodities, does not necessarily imply that the two were unrelated.

Consider first the very sharp curtailment in the production of durable goods as contrasted with the well maintained output of non-durable commodities. It would be clearly erroneous to attribute this contrast entirely or perhaps even primarily to the correlative difference in price behavior. Durable goods by definition are purchased to satisfy future as well as present wants; an automobile is bought to furnish not only immediate transportation but also transportation for years to come. But when purchasing power is sharply curtailed, consumers perforce ration their buying and emphasize nondurable commodities such as foods required for immediate consumption. Certain necessities of life must be obtained whether their price be high or low. Rents and taxes and certain debts must be paid. If anything is left after these expenditures then, and only then, can purchasing power be utilized for optional or marginal uses, such as luxuries or postponable replacements of durable goods. This principle applies not only to the ultimate consumer but also to the industrial buyer, and the unattractiveness of investment further limits expenditures for capital goods.

Thus, if a product is an absolute necessity, its consumption and production may remain stable even though its price fails to reflect the decline in general business activity. This is true, for example, of domestic salt; sales remained stable through the depression while prices, with the exception of one or two short flurries, tended moderately upward instead of downward. On the other hand, the consumption of items whose purchase could be postponed inevitably declined. Price reductions might cushion but could not prevent a drop in sales. Production of leather gloves, for example, dropped 58 percent between 1929 and 1933, even though prices fell 35 percent. Similarly, the price of water closets fell 45 percent during this period; yet a concurrent 45-percent drop in production occurred notwithstanding.⁴⁸

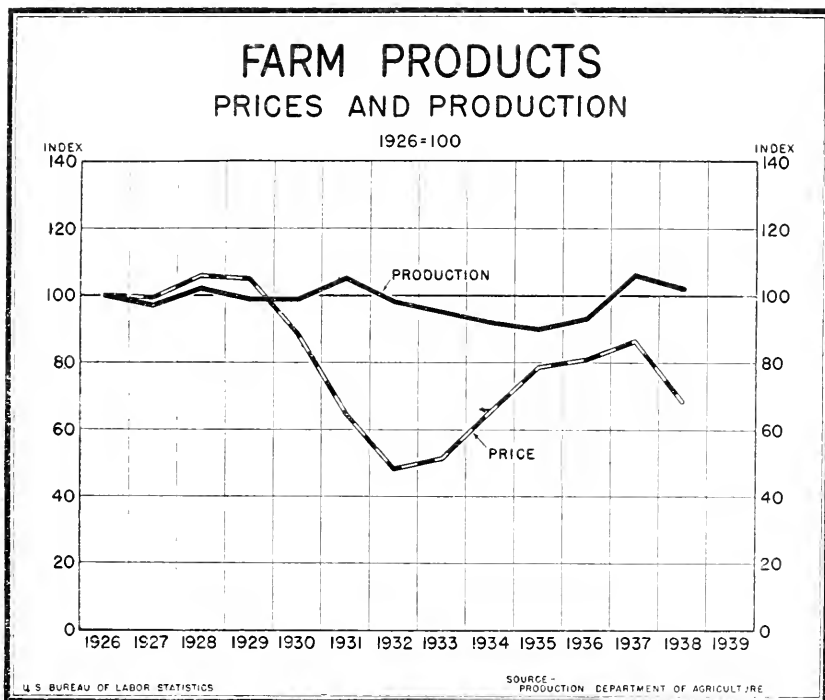
It happens that the severest price declines during the depression occurred in precisely those industries which produced the most urgent necessities of life, while the smallest declines were to be found among those commodities whose purchase could best be deferred. The prices of farm products, foods, and textile products all dropped more than 40 percent between June 1929 and February 1933. During the same period the prices of metals and metal products, house-furnishing goods and building materials fell about 25 percent. To an appreciable extent, therefore, the fact that the production of the former group was curtailed much less severely than that of the latter, reflected differences not so much in their price behavior as in the needs which they are designed to satisfy and the way in which they are produced and manufactured. The consumption of urgently needed items was maintained

⁴⁸ Specific forces undoubtedly influenced the price behavior of these two commodities during this period.

primarily because the items were urgently needed and not because their prices as a rule declined. Conversely, consumption of items designed to satisfy postponable wants declined because they were postponable and not merely because their prices were maintained.

Nor is it valid to attribute the maintenance of agricultural production wholly to the sharp drop in agricultural prices (see chart V) merely because the two were concurrent phenomena. In the first place, most agricultural products entered into finished goods, such as food or clothing whose purchase cannot be indefinitely deferred ⁴⁹ so that a well-sustained level of sales was to be anticipated. Of perhaps

CHART V



greater importance, moreover, is the supply side of the equation. The nature of the agricultural process and of agricultural markets is such that curtailment of production is difficult to achieve. For the small farmer, a sharp reduction in output simply means partial disemployment for himself and his family. It is noteworthy that, for the past 40 years, there has never been more than a 15-percent reduction in cotton acreage.

It must be recognized then that for each individual commodity, price is but one of the factors determining its level of production. Postponability of demand must certainly be considered. The nature of the productive process is important. The effect of price changes upon

⁴⁹ This refers to entire classes of goods, not to substitution within classes such as the use of one kind of food in place of another.

production is necessarily different, too, for products whose demand is joint than for those whose demand is independent.

It is apparent, however, that any appraisal of the influence of price policies upon production must pay due regard to the interrelated character of the economy. The effect of a change in price for any single commodity upon its production is influenced by, and in turn influences, the markets for many other commodities.

Thus, if it be assumed that the demand for some necessity of life is completely inelastic, its price may still have a material influence upon the amount of money consumers will have available for more optional expenditures. The production of these less urgently needed items would thereby be directly affected. For example, if the price of cigarettes had declined further during the depression, it is doubtful whether the consumption of cigarettes would have been materially increased. On the other hand, the savings realized by the consumer might have served to stimulate production in other lines. In this particular case the amount involved might be small, but the principle is significant.

Considerations of this sort are not confined to the action of commodity prices. It is estimated that about one-third of total consumer expenditures are for services of all kinds.⁵⁰ Such items as rents, taxes, interest on mortgages, utilities, professional and business services therefore account for a very substantial fraction of the consumer's budget. Many of these must be classed as necessities, just as surely as food and clothing. Consequently, their prices, too, exercise a distinct effect upon the demand for and production of postponable or nonessential commodities.

In the same way an appraisal of the effect of price changes upon the consumption of commodities subject to joint demand cannot rest upon an industry-by-industry approach. It is true that, all other things being equal, a change in the price of bricks or steel or cement cannot be expected to exert much influence upon the demand for these products. However, if the prices of all building materials were reduced simultaneously there might be an appreciable increase in the volume of construction and in the demand for each of these commodities. The effect would be enhanced still further if the costs of building financing⁵¹ and of construction labor were correspondingly modified. Although an isolated change in any one factor cannot be of more than limited significance, a concurrent change in many factors would have a very far-reaching influence.

It is for this reason that a mere plotting of price and production data, industry by industry, upon a correlation chart can yield little of significant value to the discussion. The effect of price changes for any single item is not spent exclusively in the market for that item. The economy must be considered as a synthesis and not as a series of unrelated compartments.

A consideration of the effect of price changes during the downswing on output and employment in the whole economy must, finally, take account of the relation of these price changes to changes in the volume of income and spending. It is sometimes assumed in the discussion

⁵⁰ Simon Kuznets, *National Income and Capital Formation, 1919-35*, National Bureau of Economic Research, p. 85.

⁵¹ Financing is the only sector of construction in which costs have been effectively reduced during recent years, by such programs as the Federal Housing Act.

of price and production relationships that the volume of income and spending is independent of price changes. It follows on this assumption that any reduction in prices will lead to an increase in output and probably of employment. But prices not only represent the cost of acquiring commodities to those with incomes to spend; they also determine in part the incomes of those who have commodities or services to sell. A reduction in prices may lead to such a reduction in spending as to leave the volume of output and employment and the national income in the whole economy substantially unchanged. Here again the relationship is mutual; changes in the rate of spending will have material effects upon prices.

The crux of the problem seems to be the relation of price changes to spending and investment. Although this relation has not been fully studied, it appears that in some fields at least, particularly in the case of durable goods, properly timed and coordinated price reductions during periods of downturn would be desirable from the point of view of the general economy. For example, lower prices for railroad equipment might lead to replacement and modernization programs; and simultaneous reductions in the various prices determining the cost of construction might lead to an earlier recovery of investment in housing. It is no doubt true that reductions in the prices of construction materials would permit a public-spending program to make a greater contribution to output and employment, or alternatively to make the same contribution with a smaller budgetary deficit. Consequently, governmental efforts to reduce prices of strategic commodities, and of such noncommodity items as financing costs, might be rewarded by an appreciable net stimulus to production and employment.

PRICE RELATIONSHIPS

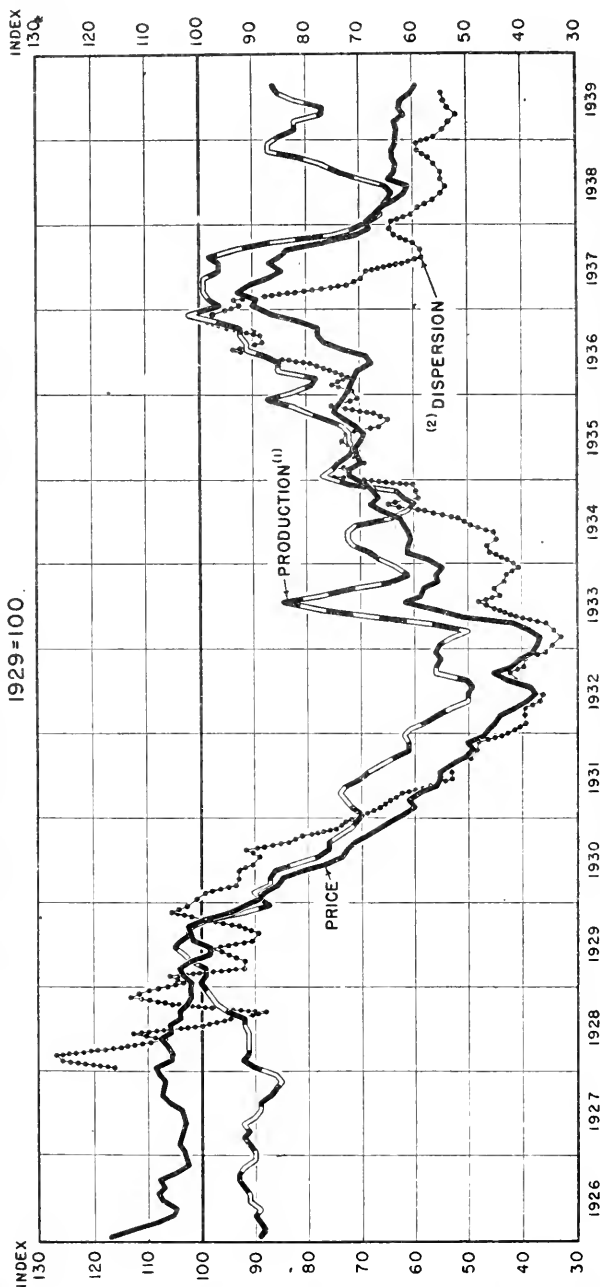
In the preceding section the effect of price behavior upon production was considered in the light of the experience of individual industries or groups of industries, though the interrelated character of the economy was stressed. In addition it may be helpful to approach the problem from another point of view, by looking at the relationships existing among commodity prices generally.

During periods of violent price movement, differences in the behavior of individual prices necessarily result in marked changes in the relationship of prices to each other. This alters the exchange patterns existing between the different segments of the economy, as well as the cost-price structures of individual industries. Changes in these relationships may, in turn, be expected to exert an important influence upon the demand for the products of specific industries, as well as upon the general rate of business activity and upon employment.

It is evident from an examination of chart VI that the behavior of prices is closely related to the rate of business activity. This chart shows three curves. One is the Federal Reserve Board Index of Industrial Production, which is a general indicator of the level of business activity. The second shows the movement of the average of 30 basic sensitive commodity prices. The third is a measure of the way in which commodity prices diverge from their predepression relations to each other, as explained in more detail below. (See pp. 45-47.) Thus a decline in this index of price relationships registers a departure

CHART VI

WHOLESALE PRICES OF THIRTY BASIC COMMODITIES, INDUSTRIAL PRODUCTION AND RECIPROCAL OF PRICE DISPERSION



SOURCES (1) FEDERAL RESERVE BOARD, adjusted for seasonal variations. (2) WORKS PROGRESS ADMINISTRATION NOTE. The measure of dispersion is the weighted average of the deviations of the 45 commodity subgroup price indexes from the oil-commodities index. The indexes were derived by dividing the monthly average deviations by the average deviation in 1929. The reciprocals were obtained by dividing each monthly dispersion index into 100.

from the pattern of prices which prevailed during 1926, while a rising index denotes an approach to those relationships.

It is apparent that all three of these curves are generally parallel. In other words, when industrial production declines sharply, the level of sensitive commodity prices falls and there is an ever-widening spread among wholesale commodity prices generally as compared with their earlier relationships. An increase in the volume of production is associated with rising sensitive commodity prices and with a decreasing spread between prices in wholesale markets.

It is far more difficult, however, to interpret the meaning of these relationships than to show that they exist. It is particularly important to realize that wholesale commodity prices are only one part of the price system. The relationships between wholesale prices and other kinds of prices, such as retail prices or wages, rents, utility rates, etc., may be fully as significant for the functioning of the economy as the relationships between different groups of wholesale prices.

However, it will simplify the analysis first to concentrate attention upon wholesale commodity prices. It seems axiomatic that certain price relationships are more conducive than others to the full functioning of our economy. Adverse effects may therefore be anticipated when there are any drastic distortions from such relationships. Unfortunately, it is very difficult to determine just what set of relationships is most desirable. If it be assumed that the pattern which prevailed between 1926 and 1929 was more conducive to full resource utilization, than that since prevailing,⁵² it may be useful to examine the departure or dispersion from the former pattern. Much analysis has been devoted to the development of such measures of price dispersion in an effort to relate them to swings in general business activity. Frederick C. Mills has contributed much in the field, and other students of price analysis have also been concerned with price dispersion.

Recently an index of dispersion has been developed by the Works Progress Administration.⁵³ This is based upon prices of the 45 commodity subgroups included in the Bureau of Labor Statistics wholesale index. The disparity between the price pattern for these subgroups existing at any time and that which prevailed during the year 1926, is first computed. (The year 1926 is, therefore, the assumed

⁵² It may well be that some of the price relationships existing before 1929 contributed to the subsequent downturn.

⁵³ Price Dispersion and Industrial Activity, 1928-1938. Works Progress Administration; February 1939. This publication also describes other work done in the field: "Frederick C. Mills has done the most extensive work in the field (a). Among others who have investigated this aspect of price analysis, F. Y. Edgeworth utilized as the measure of dispersion the so-called modulus, which is the standard deviation multiplied by the square root of 2 (b). Wesley C. Mitchell made effective use of deciles (c). Dr. Silverstolpe employed the mean deviation in his analysis (d). Irving Fisher has used the standard deviation computed from relative prices and from logarithms of relative prices (e). Norman Crump originally experimented with the arithmetic standard deviation and the logarithmic deviation (f). His most practical compilations utilized the arithmetic coefficient of variation and a measure of the 'angle of deviation derived from the standard deviation and the arithmetic mean.' A. L. Bowley has made use of the 'mean percentage divergence,' a measure similar to the mean deviation except that the variations which are averaged are the percentage deviations of individual relatives from their geometric mean (g).

"(a) The Behavior of Prices, ch. III, sec. IV, pp. 251-285.

"(b) Memoranda in Papers Relating to Political Economy (London: Macmillan & Co., 1925), vol. I.

"(c) Business Cycles (University of California Press, 1913); and The Making and Using of Index Numbers (U. S. Department of Labor, Bureau of Labor Statistics Bulletin 284, 1921), pt. I.

"(d) Dr. Silverstolpe's measures have been published in the Göteborgs Handels och Sjöfarts-Tidning.

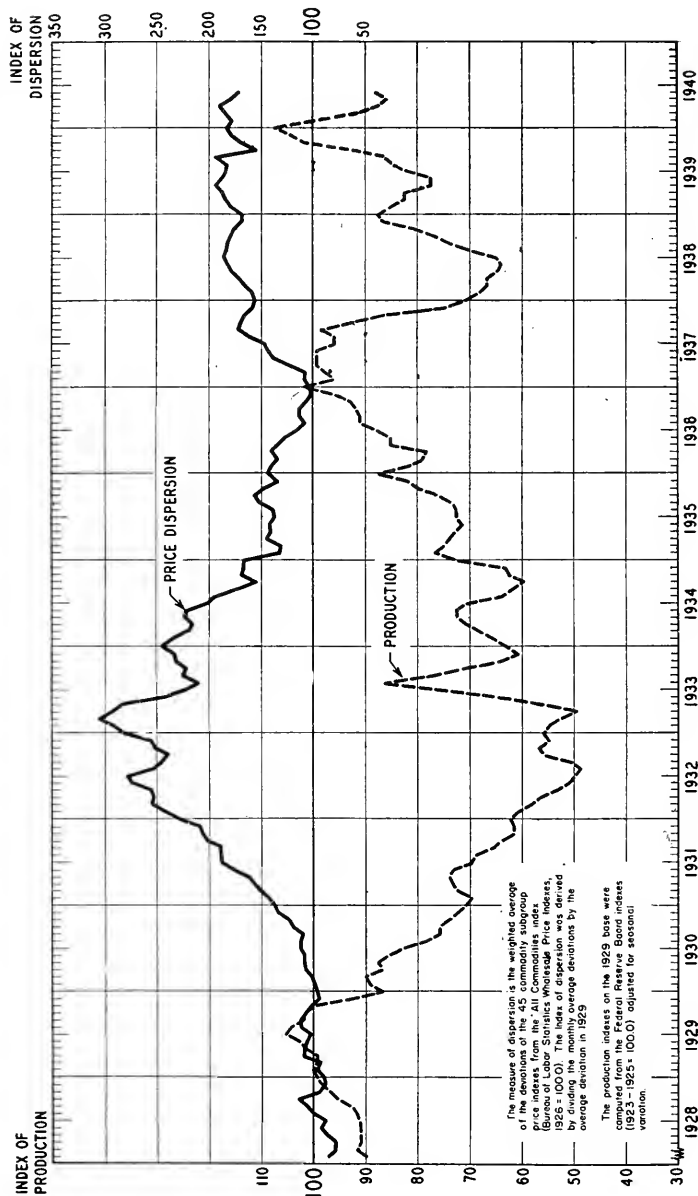
"(e) The Making of Index Numbers, A Study of Their Varieties, Tests, and Reliability (3d ed., Boston: Houghton, Mifflin Co., 1927).

"(f) The Interrelation and Distribution of Prices and Their Incidence Upon Price Stabilization, Journal of the Royal Statistical Society, 1924, vol. 87, pt. II. Mr. Crump's measures of dispersion are now published currently in the Financial Times of London.

"(g) Relative Changes in Price and Other Index Numbers, Special Memorandum, No. 5 (London and Cambridge Economic Service, February 1924.)"

CHART VII

INDEXES OF WHOLESALE PRICE DISPERSION AND INDUSTRIAL PRODUCTION



base.) The trend of this disparity or deviation is expressed in terms of index numbers, with the average deviation during 1929 being taken as 100.⁴⁴ Chart VII depicts the behavior of this index for the period between January 1928 and July 1935, and shows also the trend of industrial production during the same period. The relationship between the two curves is striking. In general, increases in price dispersion, that is, a widening spread of prices, seem to be closely associated with declines in industrial production, while reduction in the degree of dispersion is apparently related to increases in productive activity. However, the existence of this close relationship does not necessarily imply causality. Distorted price relations undoubtedly impede business activity but it is also true that reduced activity tends to disturb price relationships.

Since prices differ in their responsiveness to cyclical influences, it is inevitable that price patterns during boom and depression should vary markedly. During 1932-33 flexible prices were, by definition, much lower with respect to the inflexible than had been true in 1928-29; by the winter of 1936-37 predepression relationships had been approximately reestablished; during the subsequent recession flexible prices again tended toward lower levels while the inflexible remained relatively stable. It is basically these shifts which the dispersion index portrays.

Partly these price movements, particularly for the flexible group, are the consequences of changes in the level of business activity.

Partly it has been suggested, these shifting relationships are also to be considered *causes* of changes in business level; departure from pre-depression patterns may aggravate recession while approach to such patterns may accelerate recovery.

There have been many efforts to explore the nature of this interaction and much has been written about the manner in which changing price relationships affect productive activity. Many lines of causation have been suggested, but two are commonly stressed.

The first considers the exchange mechanism of the economy as a whole. If, at any given time, some pattern of exchange ratios is conducive to the full utilization of productive resources, it is argued that any drastic and rapid distortion of such ratios must act as a depressant. Especial emphasis has been placed upon what is undoubtedly the most spectacular of these distortions; that affecting the farmer. Between 1929 and the trough of the depression, the ratio between the prices of the commodities which the farmer had to sell and those which

⁴⁴ This index and its derivation are thus described in the Works Progress Administration publication just referred to:

"The measure worked out in the course of the present investigation is calculated by weighting the variations—which are the percentage deviations of individual relatives from their weighted mean—on a fixed base (the year 1926).

"The index of dispersion . . . is simply a measure of the spread among prices. For the most part, it represents the spread between raw materials and finished goods prices . . . although the calculation involves the prices of 45 subgroups of commodities. The direction of the trend indicates whether prices are moving toward or away from their mean (the all-commodities level).

"The computation of the index of dispersion involves, first, the calculation of the average percentage deviation which is the amount the price indexes differed from the mean price index (a). In this method, the average is obtained by weighting the percentage deviation for each subgroup by its value of production in 1935. A weighted average deviation is then calculated for each month. This monthly figure is divided by the 1929 average deviation to obtain the monthly index number of price dispersion."

(a) The subgroup indexes of the Bureau of Labor Statistics have been used in the calculation of the average deviation. The subgroup, Structural Steel, was omitted, as it is included in the Iron and Steel subgroup.

he wanted to buy declined by about 50 percent. *Other things being equal*, it might be assumed that his purchases were necessarily curtailed by about the same percentage.

So far the argument is noncontroversial. However, the effect of such a contraction in the purchasing power of any single economic group upon the economy as a whole is very complex. Reduction in the price of farm products in relation to other prices influences the purchasing power not only of the farmer but also of the nonfarm population. For example, if as a result of such a change in price relationships, the cost of foods and clothing to the industrial worker falls while his income remains the same, he will have a larger sum available for expenditure elsewhere. There are two sides to the equation.

Nevertheless, there is strong reason for believing that the net result of a drastic decline in farm purchasing power upon the economy is undesirable. It is quite likely that a substantial part of the shift in purchasing power accompanying a sharp decline in farm prices constitutes a shift from hands which would spend to hands which, at least in part, hoard. It is not at all certain that all or even a major part of the reduction in farm prices would be passed on to the industrial worker in the form of low prices for the necessities of life. Much of the difference might be absorbed by intermediate groups such as manufacturers, distributors, and banks. Consequently it would not be rendered available for the immediate purchase of consumable goods in quantities sufficient to compensate for the reduction in the farmer's buying. In other words, the importance of the change in price relationships does not lie so much in the relationships themselves, as in the shifts in purchasing power which they signify. Any sudden drastic change in the purchasing power of an important economic group may be expected to affect the economy materially; if the group involved is one which normally spends a major share of its income for consumption goods the effect is likely to be adverse.

But, this is only one part of the story. In view of the stress laid upon the influence of price disparities upon the farmer, it may be well to examine that situation more fully. Table 2 shows that the disparity between the prices of farm and industrial products was but one of the exchange problems affecting American agriculture during the depression. Prices of noncommodity items, such as mortgage interest, farm taxes, freight and utility rates are materially less sensitive to cyclical influences than even industrial commodity prices, yet a substantial share of the farmer's income is allocated to these inflexible noncommodity expenditures.

TABLE 2.—*Selected indexes of prices, wages, costs of distribution, farm taxes, and mortgage interest, 1913-38*

[1910-14=100]

Year	Prices received by farmers	Prices paid by farmers for commodities used for—			Farm wage rates	Industrial wage rates ¹	Freight rates ²	Revenue per ton-mile ³	Cost of distributing food ⁴	Farm taxes payable	Mortgage interest payable
		Living	Production	Living and production							
1913	101	100	102	101	103	103	100	98	104	111	103
1914	101	102	99	100	101	104	100	99	105	113	107
1915	38	107	104	105	103	105	100	99	105	122	114
1916	118	124	124	124	113	112	100	97	110	129	125
1917	175	147	151	149	141	127	101	98	129	143	143
1918	202	177	174	176	177	157	115	116	159	152	166
1919	213	210	192	202	207	184	129	133	174	191	196
1920	211	222	174	201	242	223	147	144	202	232	221
1921	125	161	141	152	155	205	164	174	190	248	226
1922	132	156	139	149	151	198	178	160	175	249	234
1923	142	160	141	152	169	212	153	152	177	253	233
1924	143	159	143	152	173	220	153	152	180	253	236
1925	156	164	147	157	176	221	152	150	185	258	238
1926	145	162	146	155	179	225	152	147	192	258	235
1927	139	159	145	153	179	228	152	147	190	264	232
1928	149	160	148	155	179	230	151	147	190	266	227
1929	146	158	147	153	180	232	150	146	198	268	221
1930	126	148	140	145	167	232	149	144	196	264	214
1931	87	126	122	124	180	222	146	143	178	241	205
1932	65	108	107	107	96	197	145	142	153	209	185
1933	70	109	108	109	85	192	147	136	140	179	167
1934	90	122	125	123	95	213	145	133	158	170	149
1935	108	124	126	125	103	221	142	134	174	172	147
1936	114	122	126	124	111	224	138	132	171	173	144
1937	121	128	135	130	126	243	139	127	180	179	140
1938 ⁵	95	122	124	122	124	247	144	134	173	(⁶)	(⁶)

¹ Index of composite wages in the United States, Federal Reserve Bank of New York. Converted from 1926 base.

² Average of indexes of freight rates on wheat, livestock, and cotton, 1913=100.

³ Prior to 1916, year beginning July 1, Interstate Commerce Commission.

⁴ Farm Economics, Cornell Agricultural College.

⁵ Preliminary.

⁶ Data not available.

Source: Bureau of Agricultural Economics. Farm wage rates and freight rates compiled by the Agricultural Marketing Service.

During 1932, for example, the price of farm products had declined about 55 percent from their 1929 level, while mortgage interest payable had been reduced by only 12 percent. The amount which must be paid in any year on long-term debts does not vary with changes in the prevailing rate of interest from year to year. It alters only as debts mature and are refunded, as creditors make voluntary adjustments to meet changing conditions, or as statutes are enacted to relieve acute distress.

Consequently an increase in price flexibility for commodities bought by the farmer (e. g., fertilizer, agricultural machinery), could contribute only in a limited way to the solution of the farmer's purchasing problem. The benefit which he might derive from reductions in the prices of manufactured goods is limited by the fraction of his income which remains after essential expenditures for noncommodity items have been met.

Moreover, it should be remembered that the farmer makes most of his purchases not on the wholesale but on the retail markets. The preceding discussion is centered about the behavior of wholesale prices

largely because the body of wholesale price data available is much more comprehensive than that for retail prices. Yet a very substantial fraction, probably approximating 40 percent, of total consumer expenditures for commodities represents the mark-up of various wholesale and retail distributors added to the manufacturer's wholesale price. In general, also, retail prices are somewhat less flexible than wholesale prices for the same commodities. It appears that in discussions of the consequences of price rigidity too much stress has been laid upon the behavior of wholesale prices and insufficient attention has been devoted to the inflexibility of retail prices and distributive margins.

As far as the farmer is concerned, the most serious consequences of commodity price rigidity flow from the behavior of those items which are either essential for production of his crops or are necessities of life for his family. Thus, the cotton or tobacco farmer would benefit very materially if the behavior of the price of fertilizer were more closely parallel to the price fluctuations of what he has to sell. On the other hand, the existence of relatively insensitive prices for commodities which constitute marginal or postponable expenditures affects him far less severely.

Although the immediately preceding discussion has focused upon the plight of the farmer, essentially similar considerations apply to consumers generally. The impact of changes in exchange relationships upon various segments of the economy is, therefore, selective. Some commodity price rigidities may result in such shifts of purchasing power as to create serious impediments to the normal flow of exchange during periods of depressed business activity. In the case of others, the detriment to one group may be roughly balanced by the benefit to another, so that the net effect upon the economy as a whole is small.

Cost-price relationships.—Essentially similar considerations apply to the second aspect of price unbalance which has received major attention—the disturbance of cost-price relationships industry by industry. It may be desirable to achieve a substantial degree of covariation between the price of any product and the cost of its production, particularly between the prices of finished goods and the costs of their raw materials. Assuming this to be so, noncommodity expenditures again constitute a basic limiting factor. Overhead costs per unit rise rather than decline as sales fall and production is curtailed. Were it conceivable that all administered prices behaved precisely as if they were market dominated, distortions would still remain between commodity prices and noncommodity prices. In some cases, at least, they might even become more serious.

Consequently in appraising the effect of disturbed price relationships upon business activity and production, it cannot be too strongly emphasized that the problem goes far beyond the behavior of wholesale commodity prices. Referring back to chart VI, it is apparent that the trend of industrial production is associated just about as closely with the behavior of sensitive commodity prices as it is with the index of dispersion which measures commodity price disparities. It may even be possible that the violent movement of the sensitive price group in relation to the pattern of fixed costs may affect the economy as seriously as the failure of inflexible commodity prices to parallel the movement of the flexible.

CONCLUSIONS

It has been shown that, within very broad limits, there was a tendency for production to fall less where prices fell more during the 1929-33 recession. Conversely, where prices were maintained production fell much more sharply. It has been emphasized that there were very many exceptions to this generalization. It has been pointed out moreover that the existence of this limited correlation does not of itself imply any causal relationship.

For any individual commodity, price is but one, and not necessarily the most important, of the factors which affect its production. Thus the relatively sharp decline in the consumption of most durable goods between 1929 and 1933 was probably aggravated by the stability of their prices, but it seems likely that the postponable nature of their demand in combination with lower family incomes was of at least equal or of greater importance. With the spread of unemployment and a marked curtailment of purchasing power, the sale of goods whose purchase is relatively more postponable will usually decline regardless of price; the sale of articles designed to satisfy wants which cannot be long deferred is likely to be fairly well maintained, again regardless of price.

Moreover assuming any specific set of market conditions, or any given level of purchasing power, the effect of a change in the price of any commodity upon the purchases of that commodity may be slight. This is tantamount to saying that demand for many products, particularly during periods of depressed business activity, varies little regardless of price. Among the most notable examples of such "inelastic demand" are products such as steel castings, which find no independent market but whose demand is part of a joint demand for some more complex finished goods of whose total cost they constitute but a small part. In cases of this sort, isolated changes in price may have no discernible effect upon consumption whatever. Nor can isolated price changes during periods of curtailed purchasing power expect to influence materially the sales of such products as absolute necessities of life or capital equipment for industries operating at fractions of their capacity.

However, the price behavior of any single commodity has implications far broader than merely its relation to the production of that commodity. Assuming the extreme case of an article whose demand is absolutely inelastic, a change in its price may importantly affect the amount available for expenditure elsewhere. Or, taking a typical case of joint demand, a reduction in the price of bricks alone may have little effect upon the consumption of bricks themselves, but if coupled with similar reductions in the prices of other building materials, its influence might be far reaching. Similarly, a simultaneous cut in the price of electric appliances, electric power rates, and installation costs would probably have a very different effect on sales of electric equipment, even during a downturn, than would a reduction in equipment prices alone.

In other words, if the demand curve for a specific product is inelastic, a change in its price taken alone may have very little direct effect upon its consumption, yet it may cause an appreciable shift in the position of the demand curves for other commodities. The cumulative effect of many such changes may be very considerable. Con-

sequently, in considering the implications of the disparate behavior of the prices of different commodities during downturn, it is essential that attention be directed upon the economy as a whole and not upon isolated segments of it taken separately. Moreover, it has been shown that in appraising the effects of different kinds of price behavior and in striving to form a judgment as to those best suited to promote recovery, it is necessary to consider not only commodity prices but also the behavior of the prices of many other items, such as wages, interest, rent, etc.

Some attention has been devoted to the considerations which influence business firms in their decisions as to price policy. The horizon of each firm is necessarily limited. In framing policy it considers primarily the effect of its decisions upon its own profit and loss account. It would be unrealistic to expect any individual business to reduce its prices materially in the face of its belief—whether or not warranted—that such reduction would not be compensated for by an increase in sales. For example, the producer of a commodity subject to joint demand will not in the ordinary course of things reduce his prices any more than he must, unless he has some reasonable ground for expecting that the producers of related items entering into the same finished article will do so simultaneously.

But although a broader view probably transcends the immediate horizon of the individual firm, it does not exceed the scope of public policy. It may be precisely in this field, too, that governmental action can be most profitably directed. In such a key sector of industry as building construction, for example, there is opportunity for a concerted approach. If means could be secured for simultaneous price reductions among all producers of important building materials, by labor, and by financial agencies to reduce the cost of financing, it might supply the incentive which is now lacking; insuring to each group that its own change of policy will be paralleled by such other changes as would in the aggregate exert an appreciable effect upon the market.

The technique by which such a program could be effectuated is beyond the scope of the present discussion. Certainly, however, the interrelated character of the problem makes necessary some such interrelated approach. Attention would first have to be directed to determining those broad fields in which such efforts could be most profitably expended.

Finally, it is evident that concern with wholesale commodity prices should not exclude consideration of retail markets. It has been pointed out that retail prices are, in general, less flexible than wholesale prices. If it be considered desirable that prices of certain commodities be reduced during periods of depressed business activity, it would seem at least equally important that such reductions extend to retail as well as wholesale markets. It is likely that some of the recent activities of Government are operating in the reverse direction. Thus, resale price maintenance legislation—the so-called “Fair Trade Acts,” together with the Federal Miller-Tydings Enabling Act—have increased the rigidity of the prices of many trade-marked commodities. It is possible that the state “Unfair Practices Acts” and the Robinson-Patman Act have reduced the flexibility of distributive margins in certain markets. It may be well, therefore, for Government to

reexamine its policy with regard to laws affecting the system of distribution in the light of these considerations.

All these suggestions obviously fail to go to the heart of the problem. They represent merely isolated approaches on a few scattered fronts. Despite the intensive analysis to which price inflexibility has been subjected during the past few years, no adequate proposals for any more comprehensive approach have emerged. There is little doubt that the behavior of prices intimately affects the rate of business activity. Nevertheless it seems equally evident that no simple, single approach to prices as such will solve the problem of increasing and maintaining industrial activity. The problem is far too complex.

CHAPTER III¹

NONPRICE COMPETITION

SUMMARY

Price is but one of the avenues—and not necessarily the most significant—through which competition expresses itself. It has been pointed out in chapter I that there are hundreds of other grounds upon which sellers may choose to compete, such as the offer of better quality, more elaborate service, more attractive guarantees, more convenient terms of payment, chromium plating, neon lights, cellophane wrappings, better radio programs, etc. Reference has been made to the probability that the relative importance of all these latter devices for winning business, which may be collectively designated “nonprice competition,” has increased materially during the past generation, while the emphasis on the price aspects of competition has correspondingly declined.

This change in competitive emphasis has many implications. In the first place it inevitably alters the focus of government policy designed to cope with the problems of monopoly and competition in industrial markets. The efficacy of any program based upon or directed toward the behavior of prices alone neglects elements of vital importance.

More broadly the direction which competitive rivalry takes influences in many important ways the amount and variety of goods which are produced for consumption and the standard of living of consumers generally. The effect upon the well-being of the ultimate consumer is especially marked because many forms of nonprice competition are particularly significant in relation to retail markets and to the everyday necessities of life.

The analysis presented in this chapter is in no sense a complete survey of all forms of nonprice competition; it is confined to a few of the more significant. Nevertheless, it suffices to elicit the extreme complexity of the issues involved.

Nonprice competition expresses itself through a wide variety of avenues. Perhaps the most important of these is the actual quality or content of the products involved. For example, little effort has been made during recent years to reduce the price of automobiles to the consumer. Instead, stress has been placed upon constant improvement in quality, performance, and appearance. Automobile advertising reflects this policy, placing little emphasis upon price and much upon distinctive mechanical features, economy, and beauty of line. The same observation applies to a greater or less extent to most other complex mechanisms such as radios, refrigerators,

¹ Ch. III was prepared by Saul Nelson. Laura Mae Brown compiled the bulk of the material upon which the analysis is based, particularly with reference to the influence of business convention as exemplified by the institution of price lines.

oil burners, vacuum cleaners, and the like.² In the case of refrigerators, for example, the retail prices of comparable models of competing makes are identical almost to the penny.

Differences between rival products may represent very real corresponding differences of desirability or usefulness. In addition, however, there is an undoubted tendency to create the appearance of difference where no real intrinsic difference in physical utility exists. In developing and retaining a market, producers and distributors make strenuous efforts to distinguish their products in the public eye from those sold by their competitors. As a result, competition in quality often takes the form of adding minor eye-catching features bearing, at best, a remote relationship to the intrinsic utility of the product. Intensive advertising campaigns, describing the merits of such features, are frequently accepted by the public with somewhat more credence than their accuracy warrants. Buyers may come to demand them with little or no regard for price relationships and to reject, as inferior, products not bearing them.

Although nonprice competition is most commonly associated with the element of quality, it should not be concluded that this is its only aspect. Collateral terms of sale are often important. Among these are guarantees of service or performance. In the case of rubber tires, for example, guarantees of mileage, backed by appropriate provisions for allowance in case the product falls short of the guaranteed performance, probably exert a distinct influence upon the market. The provision of adequate facilities for service and replacement has received much attention in certain lines of business. Thus, an automobile purchaser must consider not only its first cost, but also the prices which he will be called upon to pay for inevitable repairs. The sale of one line of agricultural implements has been distinctly handicapped by the lack of an adequate widespread service organization.

The direction which competitive rivalry takes in any given industry is influenced both by the intrinsic nature of its markets and by policy decisions of the concerns comprising it. In some industries, for example, the nature of the product is such that elements of quality and style inevitably exercise an important influence upon the buyer's selection. This is true, for example, in the apparel markets in which well-defined "price lines" have become recognized as the result of custom and convenience. Thus, there is a limited number of wholesale prices at which almost all women's medium-price dresses are sold. These wholesale prices are, in turn, reflected in similar, though somewhat less rigid, lines in retail markets. As a result the focus of competition becomes the character of the garments which can be offered at the accepted price and not the price at which some specific garment should be quoted.

In their decision to stress nonprice elements in sales strategy, business concerns are often influenced by the desire to avoid direct price competition with their rivals. This has been one of the major factors in stimulating the use of advertising and of distinguishing brands and trade-marks. Much effort has been devoted to persuading the prospective buyer that advertised and branded products have qualities which distinguish them in important ways from similar products sold

² In such lines as radios and refrigerators, whose growth has been fairly recent, prices have been materially reduced as techniques of production improved. However, even in these cases sales emphasis at any given time usually centers upon features other than price.

by others. These efforts have been most successful in those fields in which consumers find it particularly difficult to form objective judgments of the quality and usefulness of the merchandise. The drug and cosmetic industry furnishes an outstanding example of the manner in which the effective use of these techniques can shield trade-marked products from direct price competition with similar merchandise; very wide price spreads exist between virtually identical products differing only in name.

Business policy decisions to stress some form of nonprice competition may represent a voluntary choice. However, concerns which prefer to compete on a price basis are sometimes forced to adopt what they consider a less satisfactory alternative because of pressure applied from without. Such pressure may result from Government regulation of price or perhaps from coercion by competitors.

In general, businessmen have displayed much ingenuity in seeking some competitive outlet as alternative to price reductions. Under N. R. A., when many prices were controlled by code provisions, some of the schemes adopted verged on the fantastic. For example, a retail druggist in California, unable to cut prices, employed a medium to give free psychic readings to his customers. An automobile dealer was accused of indirect price cutting because he bought six suits of clothes from a tailor to whom he sold a car. Lumber manufacturers cut prices indirectly by shipping a higher quality of lumber than the invoice called for. Coal producers offered guarantees of heat content which they knew were impossible of fulfillment, backed by a penalty in case the fuel failed to meet the standards set. Price-maintenance laws (the "Fair Trade" Acts) which largely eliminate price competition between retailers selling trade-marked products have resulted in emphasis upon elaborate service in some cases, and in a search for indirect ways of granting price concessions in others.

In some industries, although legal controls may be absent, the fear that price reductions may lead to price wars often results in the multiplication of grades and sizes. For example, instead of cutting prices on a standard grade of fertilizer, the producer may introduce a slightly different grade. As competitors match the new mix, the process is repeated. In many states the number of different grades became so bewildering that laws were passed to limit the variety that could be sold. Similar practices have occurred in many other industries.

This very cursory review of some phases of nonprice competition emphasizes both the importance of the issues and the difficulties of any unqualified appraisal. It seems reasonably clear that the change in competitive emphasis has not been entirely undesirable. Thus it is probably true that the increased attention paid to quality and performance has served to stimulate technical research. Certainly the automobile, the refrigerator, and the tractor are more satisfactory products today than they were some years ago. Undoubtedly technical advances would have occurred even if competition had focused upon price, but it is at least arguable that centering attention upon quality served as a more effective stimulation to its improvement than would otherwise have been possible. Conversely, there is some evidence that excessive emphasis upon price may lead at times to undesirable degradation of quality.

Where products are highly diversified and comparability between rival merchandise is very difficult to obtain, the elimination of price as a major competitive factor may actually simplify the consumer's problems of selection. For example, since the standardization of women's dresses is remote from reality, the institution of price lines is not without benefit. It is probably simpler for the average consumer to select the dress she likes best at a given price than to weigh the desirability of small differences in price as against small differences in quality.

On the other hand it must be recognized that emphasis upon quality has often served to divert effort from programs designed to produce cheap but satisfactory merchandise to meet the needs of lower-income groups. It has been argued, for example, that the production of cheaper automobiles or refrigerators, stripped of all luxury features, could serve a useful purpose in expanding the potential market for those products.

One of the most serious objections to many forms of nonprice competition is the manner in which they complicate the buyer's problems of selection. Price is a universal measure and the significance of a price difference is readily understood by any buyer. The appraisal of differences in content or quality, or the translation of collateral terms of sale into price equivalents, is much more difficult, particularly for the average untrained consumer. Consequently, when the policy of distinguishing one's product from a competitor's is revealed not in any real betterment of quality but in the multiplication of unneeded gadgets and superficial eye-catching features, there may be a distinct loss of competitive efficiency. It is unlikely that fancy packaging is of as much value to the consumer as low prices or improved quality. The forms taken by nonprice competition when it reflects the suppression of price competition through collusive or coercive tactics seem particularly valueless in serving the economic system. All these schemes have the disadvantage of substituting for a direct price cut, which the consumer wants and can measure, some substitute of uncertain value which he can well forego. If but a small fraction of these economically useless expenditures were translated into reductions in the price level, the gain in public purchasing power and the resulting stimulus to production and employment would be material.

During recent years, there has been a very marked trend in the direction of rendering available to the consumer more accurate information—and less misinformation—regarding the character of the various commodities on our markets. The impetus has come from a number of sources. Consumers themselves have shown a growing awareness of their interest and have formed increasingly effective organizations. Direct pressure has been exerted upon businessmen, particularly upon retailers, to furnish adequate technical descriptions of the commodities they offer for sale. Marked success has been achieved in the field of textile fabrics; accurate designations of fiber content and weave have been substituted for confusing names designed to conceal rather than to reveal the true nature of the product.³

Businessmen, intelligently aware of their self-interest, have contributed materially in many fields. Alarmed by the unnecessary and

³ Standard specifications developed by the Bureau of Labor Statistics for use in compiling its retail price data have stimulated the interest of many retailers in the accurate designation of textile products.

expensive multiplication of grades and container sizes, they have cooperated with Government and the consumer in programs of simplification. Canned goods, accurately labeled as to grade, have appeared on the market. The results of laboratory tests of competing products have been publicized. Of course these moves have encountered material resistance but they have progressed notwithstanding.

Finally Government—both Federal and State—has intervened actively. The National Bureau of Standards has cooperated with industry in the move for standardization. The Federal Trade Commission and the Food and Drug Administration have done much to combat misrepresentation and to further informative labeling. Congress has materially facilitated the work of these agencies by passing the new Food and Drug Act and the Wheeler-Lea Act.

To summarize, the increasing emphasis upon the nonprice aspects of competition, like most broad economic trends, is not susceptible to unqualified appraisal. In part it is an inevitable reflection of changing technology; in part the result of more controllable forces. Some of its manifestations and results are probably desirable, others are questionable, while still others seem definitely to impair economic efficiency.

The most clearly undesirable aspects of this trend seem to arise from coercive and collusive devices designed to restrain or eliminate price competition. Public policy has been traditionally and properly concerned with opposing such devices.

At the same time Government can encourage, both by cooperative and by regulatory action, the improvement of commodity information and the development of adequate standards of quality and performance. Such a program seems well designed to discourage inefficient and detrimental manifestations of nonprice competition.

The following sections of this chapter do not present a comprehensive record either of the causes or the effects of nonprice competition. They treat a few outstanding types of competitive patterns, selected partly because of their importance and partly because of the availability of data for statistical measures. A brief review of some of the causes and implications of the trend away from price competition is first presented, followed by a discussion of the role of quality as an outstanding focus of nonprice competition. Certain specific competitive techniques are then examined and their significance to the functioning of the economy appraised. The first of these is the practice of price lining as exemplifying the manner in which business convention may alter competitive emphasis. The second relates to the use of brands, trade-marks, and advertising as means of distinguishing the products sold by business rivals. The last examines the way in which competitive strategy is continually altered to avoid restraints imposed upon any specific form of competition either by Government or by industry. Finally, the conclusions derived from this analysis are considered in their relation to the formulation of Government policy.

PRICE VERSUS NONPRICE COMPETITION—THE SETTING OF THE PROBLEM

The changing focus of competition.—Many recent studies of the workings of our economy maintain that competition has for years been declining in intensity and scope. To quote from one of these:

An industrial organization which was in the broad sense competitive has become diminishingly so during the past half century * * *

* * * * *

Competitive capitalism was given a protracted and thorough trial in the United States after the Civil War. Although legal institutions were framed with a broad and consistent regard for the assumptions of competition, capitalism failed to preserve its competitive quality * * *

* * * * *

The rise of the "heavy industries," changes in methods of selling, and the widening use of the corporate forms of business organization are bringing, if they have not already brought, the era of competitive capitalism to a close.⁴

This point of view has, of course, been vigorously challenged. Specific illustrations of industries in which competition seems to have become less intense during the past generation are countered with examples of other industries, such as petroleum, in which earlier monopolistic controls have apparently abated. The evidence for either side is largely an assembling of individual type cases; even for those the data available often permit conflicting inferences. Moreover, agreement is even lacking as to precisely what constitutes competition. Neither set of arguments seems at present conclusive.

Although proof of the thesis that competition is declining appears inadequate, there is abundant evidence that the focus of competitive effort has been shifting. In many sectors of the economy price competition has dwindled in importance and sometimes even disappeared. The nonprice aspects of competition have been emphasized instead.

However, this redirection of competitive strategy cannot of itself be accepted as synonymous with a decline of competition. In some instances it has probably been concurrent with an actual reduction in the intensity of the competitive struggle; nor is evidence lacking that this has at times been its specific purpose. Yet there are cases, though perhaps less typical, in which the converse is true and in which emphasis upon factors other than price has intensified rather than tempered the struggle between business rivals. What the net result for the economy has been, on balance, is probably impossible to determine. The available clues are fragmentary. Intensity of competition is an abstract concept, not susceptible of quantitative appraisal.⁵

Nor does it seem particularly important, even for abstract discussion, whether the trend toward nonprice competition has or has not carried with it an appreciable abatement of the competitive struggle. The significant issue, from the standpoint of public policy, is more immediate and practical. The forms which competition takes intimately affect the ways in which our resources are utilized, they influence the cyclical swings of business activity, and, in the long run, the consumer's standard of living.

Nonprice competition is of particular importance to the standard of living of consumers because of the extent to which it affects retail markets and the everyday necessities of life. The amount which a family must spend for food, clothing, groceries, drugs, and cosmetics is related to the manner in which business concerns selling these products choose to compete, by their decisions to stress or skimp quality, to advertise more or less intensively, to pack simply or elaborately, to favor or oppose retail price-cutting, and so on. This is clearly a matter of broad public concern.

⁴ *The Decline of Competition*, by Arthur R. Burns, 1936, pp. v, 1, 40.

⁵ However, some attempts have been made to measure degree of monopoly power. See, for example—Michael Kalocki—A Theory of Commodity Income and Capital Taxation, *The Economic Journal*, September 1937, vol. XLVII, p. 444.

A. P. Lerner—The Concept of Monopoly and the Measurement of Monopoly Powers, *The Review of Economic Studies*, vol. I, No. 3, June 1934.

A wide variety of forces has contributed to the trend away from the price aspects of competition. Some of these have been considered earlier in this report; the salient points will be repeated here for the sake of completeness. Among the most important of these forces are the technological developments of recent years, reflected in the increasing complexity, differentiation, and the ever-changing character of the commodities on our markets. As commodities increase in number and complexity, it becomes more and more difficult for the purchasers to form accurate estimates of their serviceability and utility. Price differences become an ever less satisfactory yardstick for guiding the buyer's selection. Even the most expert professional purchasing agent often faces great difficulty in attempting to translate physical product differences into terms of price. For example, the calculations which a manufacturer must make in choosing between alternate makes of machinery or different types of motive power unit involve a host of variables, many of them based upon hazardous forecasts of future trends; the initial price may be only a very minor consideration. Even the raw materials of industry have multiplied amazingly. Synthetic fibers, new alloys, and plastics of all kinds confront the industrial buyer with a constantly increasing variety of choices which he must make. As a result, the significance of price in guiding his choice is much diminished.

The problems of the expert industrial buyer, difficult as they are, are far less overwhelming than those which the technically untrained consumer faces. There are today relatively few products on retail markets which can be compared upon a simple price basis. Even apparently standard products like salt or sugar have been packaged or branded in such a way as to discourage reliance upon price alone.⁶

Increasing product complexity and differentiation has therefore limited the significance of price comparisons, while it has correspondingly emphasized the nonprice aspects of competition. In large part, this has simply reflected the inevitable effects of technological development. To an extent, however, there has been a deliberate policy on the part of businessmen to accentuate the apparent differences between their products and those of their rivals, for the specific purpose of diverting competition into nonprice channels.

Many businessmen, probably a substantial majority, have long preferred to emphasize the nonprice aspects of competition and to subordinate price appeal. There are many apparent reasons for this preference. Perhaps the most important is that consumer good will based upon nonprice factors tends to be more lasting than that depending simply upon price appeal. The manufacturer whose sole selling argument is price must continue to undersell his competitors indefinitely. Should they meet his offer, his advantage is gone. On the other hand, if he has in some way succeeded in creating a demand among buyers for his products because of their quality, or appearance, or packaging, or through the effective use of trade-marks or advertising, his position in the market becomes more secure. He is not as vulnerable to price reductions made by his competitors as would be true if he depended exclusively upon price appeal. He achieves a protected sector of the market to the extent to which buyers have become accustomed to attribute especially desirable qualities to his wares.

⁶ For a fuller discussion of the effect of brands and trade-marks upon price competition, see pp. 75-90 below.

With it he also attains some latitude in determining his own price policy without the need of constant reference to what his rivals are doing.

In a sense, the maintenance of a market position based upon non-price appeal requires continual vigilance over the long run, just as does one based upon price appeal. Thus, good will built up by the intensive use of advertising cannot be long retained if the advertising is discontinued. Nevertheless most, though not all, businessmen seem to find this less onerous than the maintenance of a policy of continually underselling competitors.

Moreover, business rivals often bitterly resent the tactics of the firm which constantly strives to undersell. The price cutter consequently risks reprisals in the form of retaliatory cuts, which often culminate in costly price wars. Even if his rivals' products or prestige are admittedly superior, they are often reluctant to permit him to undersell them by an amount sufficient to compensate for this disadvantage.

From the point of view of the seller, price appeal also has a certain disadvantage in that its value can be measured in precise terms. A price reduction by one firm loses its competitive force completely if some other firm exactly matches it. On the other hand, even an intrinsically insignificant change in the character of the product or in the context of its advertising cannot often be matched so exactly, and the advantage gained thereby is more likely to persist.⁷

As the business-getting potentialities of nonprice competition have been more thoroughly explored, price competition has fallen not only into disfavor but also into disrepute. Many trade associations have conducted long and vigorous campaigns to persuade their members that price cutting is an unethical practice; today the price cutter is widely considered a chiseler. The value of price reductions in expanding markets has been ignored or underemphasized; it is contended instead that they disrupt the standards of an industry and create distress to all its members. Price "stabilization" is held forth as the desired goal.

A frank expression of this point of view by a prominent industrial engineer and trade association manager follows:

If I were in a position to write the ticket for industry in this country, I should give each industry the right to name the prices at which its products should be sold, and I should enforce these price determinations through the due process of law. In my opinion, these prices should be based on certain factors which would insure absolute fairness and equality of treatment to capital, management, labor, and consumers—four factors involved in every transaction. I should determine these prices on the average industry cost, using replacement costs for raw material, adequate wage rates for labor, and overheads based on a reasonable use of the facilities of the industry. I should not expect this cost to include carrying charges on idle, unused, or excessive capacity. Executive salaries should be checked and should bear a reasonable relationship to the size of the company involved.⁸

Among those who advocate eliminating price competition are many who hold no strong brief for the nonprice forms of competition either. Some at least are striving toward a market in which each firm is content with its allotted share of the total business available, and makes

⁷ Of course some nonprice features—e. g., the terms of a guarantee—can be matched just as precisely as price. Nevertheless, the proposition is broadly valid.

⁸ Stevenson, Charles R., *Price Control and the Allotment of Business*—address delivered before the National Association of Cost Accountants, June 26, 1934.

no effort to increase that share by the use of either price or nonprice tactics. The elimination of price competition is to some people merely a step to the ultimate goal, the elimination of all effective competition. As a preliminary step, however, they prefer to see sales effort devoted to nonprice channels as a less obnoxious form of rivalry for business.

The development of certain business customs and conventions has also served to divert competition from price channels. Among the more important of these is the establishment of fairly rigid "price lines" for a wide variety of commodities. The effects of this practice are considered subsequently. (See pp. 70-75.)

Whether on grounds of expediency, custom, or ethics, therefore, the business world at large, with some notable exceptions, has come to frown upon price competition. In order to make this disapproval effective, ingenuous techniques have been devised for eliminating price competition by fixing (or more euphemistically "stabilizing") prices in many lines of industry. Many of these have proved extremely effective. This phase of the subject, however, is not within the province of this report.

At times Government, both Federal and State, has intervened in ways calculated to limit the freedom of price competition. The most comprehensive step of this kind was the regulation of trade practices under the N. R. A. At the present time such regulation is much more narrowly confined, existing primarily in the field of public utility rates, of bituminous coal, and of certain farm products.

In addition to such direct fixing of prices, other kinds of legislation have served to limit price competition to some degree. For example, the Fair Trade Acts which are now in force in 44 States, together with the Miller-Tydings Enabling Act, permit manufacturers to fix minimum resale prices for articles bearing their identifying brand or trademark. As between retailers, therefore, competition, on the sale of items of the classes affected, particularly of drugs, toiletries, cosmetics, books, and liquors has been forced to a considerable extent into nonprice channels.

Many States have enacted Unfair Practices Acts which prohibit sales below cost, with the term "cost" defined in various ways. While these laws do not of themselves suppress price competition, there is some evidence that trade associations in a number of areas have used them as a vehicle for fairly rigid price control.

Mention may also be made of the antidiscrimination laws, such as the Robinson-Patman Act, though their effect is somewhat less obvious. To the extent to which sellers are required to maintain uniform prices to all buyers, they are rendered unable to seek particular sales by cutting prices. If they choose to rely upon price competition as their primary sales argument, they must cut prices simultaneously to all comers. Naturally, many sellers are far more reluctant to take such a broad step than to reduce prices on individual transactions. In this way, therefore, antidiscrimination laws may restrict price competition and may favor the emphasis of nonprice factors.

Numerous other developments have undoubtedly affected the trend away from price competition. For example, changes in market structure, such as the number of buyers or sellers in a given market or modifications in channels of distribution have exercised an influence upon the focus of competitive strategy. However, such forces,

important as they be, have been less consistent in their direction and perhaps less significant in their net effect than those which have been just discussed.

Prices related to nonprice elements of the transaction.—So far, the terms "price competition" and "nonprice competition" have been used broadly to denote different general patterns through which business rivalry expresses itself. Actually, of course, they are not mutually exclusive terms and it is difficult to draw the precise boundary between the two.

A host of elements enter into the exchange between the buyer and seller which constitutes the general business transaction. Some of these, as, for example, trade discounts, are clearly translatable into terms of exact price-equivalents. Others, such as brand prestige, or streamlined design, or neon lights in front of a retail store, are not translatable into price equivalents and may, therefore, be considered forms of nonprice competition.

In between, however, there is a wide variety of elements on the border line which cannot be clearly assigned to either category. Premiums offered in connection with sales at retail constitute one example. Sometimes the premium offered is of a character which may be considered the direct equivalent of a monetary rebate, as in the case of profit-sharing coupons, or it may take the form of some specific article whose value is readily measurable in terms of dollars and cents. Presumably, premiums of this kind might be considered forms of price competition. On the other hand, many premiums have a less tangible value, as in the case of pins denoting a child's membership in some club organized for advertising purposes. Similarly credit terms, particularly on conditional sales, have both price aspects, such as the rate of interest, and nonprice aspects, such as the form of security demanded or the conditions under which the article sold may be repossessed. Guarantees expressed in general terms, or which fall well within the expected performance of the merchandise in question are largely of a nonprice nature; however, if the guarantee stipulates a specific performance, with a bonus for exceeding the guarantee and a penalty for failing to come up to it, the price aspect may be paramount. Certain elements of quality yield satisfactions difficult to measure in terms of price; others such as the heat content of fuels or the tensile strength of steel are often directly translatable into price equivalents.

It is apparent, therefore, that no strict line of demarcation between price competition and nonprice competition is practicable. Consequently the two terms should be understood to relate to broad trends of business strategy rather than to any specific practice or set of practices.

ASPECTS OF NONPRICE COMPETITION

Quality and performance.—Perhaps the most important single avenue through which nonprice competition expresses itself is the actual physical quality or content of the goods involved. Of all the nonprice elements entering into the ordinary transaction, this seems to be the most universally significant. Moreover, it is probably the outstanding single factor conditioning the interpretation of price statistics.

Quality itself is by no means a simple concept. For any single commodity it may involve a host of variables. In the case of auto-

mobiles, for example, any appraisal of quality must include durability, gasoline consumption, probable frequency and cost of the necessary repairs, appearance, comfort, riding qualities, safety, ease of manipulation, "brilliance" of performance, and so on almost indefinitely. Each one of these may be subdivided further; thus economy of operation is a function of the speed at which the car is to be driven, as well as of the roads over which it will be used. Some of these characteristics, e. g., gasoline consumption, may be expressible in quantitative terms. Others, such as appearance, defy such measurement.

All of these factors modify the significance of price quotations. Some, as has been said, are relatively concrete and tangible; for example, it is possible to arrive at estimates of the durability of certain kinds of goods. Chart VIII compares the price of automobile tire casings with their average life during the last 27 years. Between 1913 and 1937 average tire life in years more than tripled; during the shorter period since 1926, there was an increase of almost 70 percent. In terms of mileage, the increase in durability was undoubtedly even greater, since the average car travels much farther in a year than was true 20 or 30 years ago. It is apparent that the trend of the prices charged for automobile tires tells only part of the story.

Similarly, in the case of mechanical refrigerators there has been a substantial increase in durability since 1920, although the change during the past decade has not been so great. In 1920 the average life expectancy was 6 years; in 1926 it was 11 years; in 1930 it was 13 years, and today it is 15 years.

Economy of operation is another element of quality competition which may be approximately measurable. For example, the average current consumption for 6-cubic-foot electrical refrigerators was reduced 21 percent between 1931 and 1938.⁹

Similarly, according to a recent study, operating costs per mile for automobiles were reduced by more than 40 percent between 1925 and 1937; a significant component of this reduction was a decline of almost 70 percent in repair expenses per mile.¹⁰

A comprehensive survey of some of the more measurable elements of quality in the case of farm machinery was published by the American Society of Agricultural Engineers in 1933.¹¹ This study sought to appraise these changes in quality in quantitative terms. It was concluded that changes in a wide variety of operating characteristics between 1910-14 and 1932 could be expressed as composite percentages of improvement.¹²

⁹ According to tests made in 1931 by the Procurement Division of the Treasury, the average consumption of a 6-cubic-foot refrigerator (five makes) was 44 kilowatt-hours per month. In 1938 a test based on 14 makes of refrigerators showed that the 6-foot box was consuming on the average only 35 kilowatt-hours per month.

¹⁰ The Dynamics of Automobile Demand, General Motors Corporation, 1939, p. 117. (Part of this decline in operating costs is attributable to the lower prices and greater durability of tires.)

¹¹ Report of an Inquiry into Changes in Quality Values of Farm Machines Between 1910-14 and 1932 pt. I, pp. 5 and 6.

¹² Quoting from this report:

"It was also decided to limit the study to 25 typical farm implements already highly developed and in general use in the pre-war period, and not to go into the field of automobiles, trucks, and tractors which, owing to their later development, present different questions and would call for a separate study.

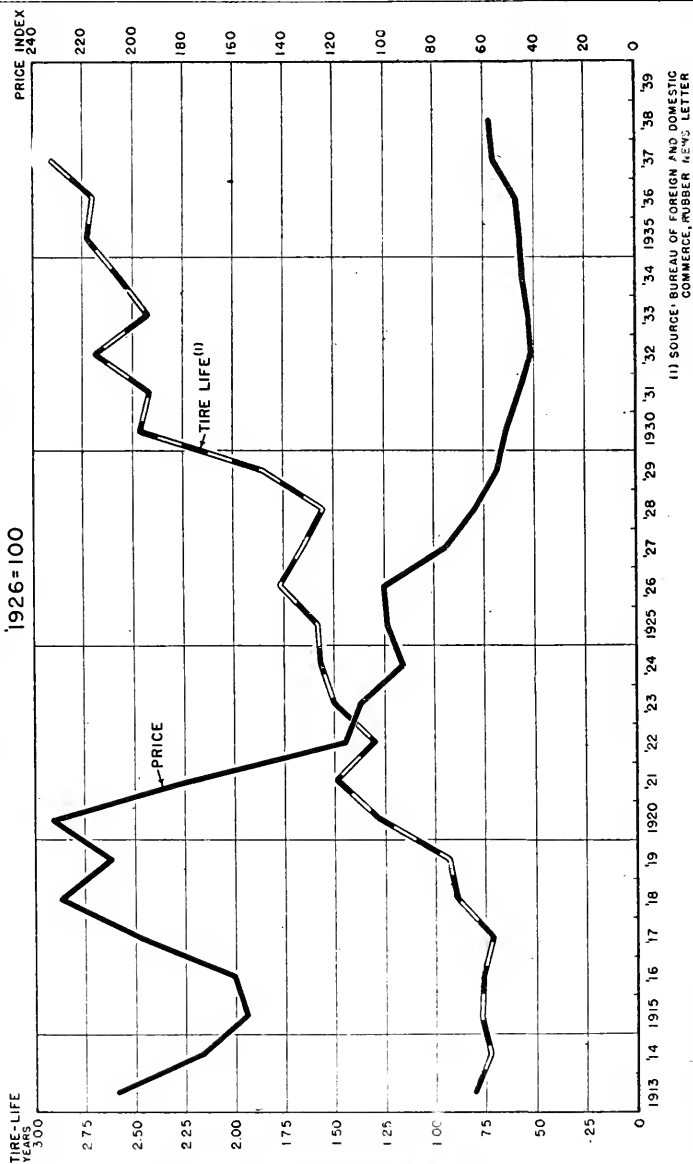
"Changes in the design, material, or construction of a farm machine, or any part thereof, may add to its quality value in a number of ways, of which the following are worthy of special consideration:

"1. *Greater durability and productive usefulness.*—The value of this quality is measured in terms of units of service rendered during the life of the machine, such as acres of land plowed, planted, cultivated, or harvested; bushels of grain threshed or shelled; pounds of food ground; quantity of cream separated, etc.

"2. *Reduction in the replacement of wearing parts.*—Most machines have certain parts which in normal use are subject to wear. Farm machines are so designed as to make the replacement of these wearing parts convenient. The use of wear-resistant materials, such as heat-treated or alloy steels and corrosion-resisting

CHART VIII

AUTOMOBILE TIRES WHOLESALE PRICE AND AVERAGE LIFE OF AUTOMOBILE TIRES 1926=100



Quality changes are not usually thought of in connection with such relatively standard items as steel, yet even here they may be of material importance. Thus, during the last 15 years there have been distinct improvements in the quality of ordinary structural steel. Government specifications in 1933 stipulated an ultimate tensile strength of 55,000 to 65,000 pounds per square inch with a minimum yield point of 30,000 pounds. Present specifications called for an ultimate tensile strength of between 60,000 and 72,000 pounds with a minimum yield point of 33,000 pounds per square inch. These changes have been reflected in modifications of standard design requirements. For example, 12 years ago the Procurement Division based its structural steel design upon a working strength of 16,000 pounds per square inch. As the quality of steel improved, the working strength was increased to 18,000 pounds and, 5 years ago, to 20,000 pounds per square inch. In other words, the tonnage of steel

materials, not only means less expense for replacement parts, but less labor and time are required for replacements.

"3. *Reduction in loss of time due to failure of machines to function continuously.*—The value of farm machines (through improvement in design) is advanced by their ability to operate continuously without delay due to choking, clogging, or the failure of any part to function properly.

"4. *Less breakage of machine parts.*—The making of machine parts of the proper design and of high-quality, reliable materials results not only in a reduction of the expense for broken parts, but also in a saving of labor and time for making the repairs. Furthermore, owing to the importance of timeliness for many farm operations, the dependability and freedom from breakdown of a farm machine is of great value. Many safety features, such as spring releases for plows, have been introduced to protect machines from breakage.

"5. *Increased efficiency in the use of energy.*—The value of a farm machine is raised when a stated amount of useful work can be accomplished with the consumption of less energy or power. Increased efficiency is secured by the elimination of friction losses through the use of friction-reducing bearings, better lubrication, and also by the introduction of mechanisms and features of design by which energy is applied more effectively to the work to be accomplished. For instance, the advance in the design and manufacture of silo fillers, or ensilage cutters, has resulted in easily doubling the output of useful work per unit of energy consumed.

"6. *Increased capacity of machine.*—With the use of better design, better quality materials, and improved construction, the capacity of many machines may be increased by a permissible higher speed of operation. Most field and belt-driven machines may now be operated at higher speeds with a corresponding increase in output.

"7. *Improved operating efficiency.*—This quality is represented by the more efficient functioning of machines such as the more thorough elimination of weeds through cultivation, the harvesting of a crop with less waste, or the removal of waste and weed seed from threshed grain.

"8. *Improvement in operating precision.*—Although related to operating efficiency, precision in operation and control represents a value not wholly covered by this term. This characteristic is indicated clearly by accuracy in seeding machines, fertilizer machines, control of machines, etc.

"9. *Reduction in time required to care for machines.*—The time required to properly care for the lubrication and adjustment of machines may be an important consideration as the output of useful work is influenced thereby. Many current machines require lubrication only one-tenth as often as earlier machines on account of enclosure of working parts, improved oilers, grease cups, etc.

"10. *Reduction in lost time and expense due to accidents.*—Important advances have been made in protecting life and limb by safety releases, better guarding of working parts, etc., reducing the loss in time and money caused by accidents.

"11. *Greater economy through improved operating devices.*—Power lifts, balancing springs, convenient levers, and adjusting devices make it possible to operate machines with a saving of time and effort.

"12. *Increased efficiency through lessening operator's fatigue.*—A more comfortable and efficient position for the operator, better protection for him from dirt and dust, and elimination of excessive vibrations contribute definitely to the value of a machine, making possible more continuous operation over longer work periods.

"Being already familiar to a considerable extent with the construction, field operation, and testing of farm machines, and the changes therein during the period under consideration, the authors felt that their task should be primarily one of inspection, comparison, and appraisal rather than actual field tests. Obviously the time and expense required would completely prohibit determination through following and comparing the operation of 1910-14 and 1932 machines of the same type and purpose under varying conditions of soil, crop, and climate.

"Accordingly, the authors made a detailed examination of twenty-five machines of 1932 in comparison with similar machines of 1910-14 at the plants of three prominent farm-machinery manufacturers where machines of both periods were made available, together with the engineering records and data relating thereto. Besides comparing and checking the machines part by part, the authors also questioned at length a number of engineers who have been devoting themselves to the development of these particular machines during the past 25 years.

"In addition, the authors were provided with chronological record of changes in machines, reports on elaborate and extended shop and field tests made to determine the results of these changes, and the findings and opinions of the engineers in question. The authors also called for and were supplied with data bearing on the reduction in the demand from farmers for certain repair parts after changes were made, and on this point were convinced that in many instances such reductions were extensive and significant.

"Further, in order to evaluate more accurately the effect of changes in the life and performance of the machines considered, accelerated tests of wearing parts were made and laboratory tests of many important typical parts, old and new, were conducted in the presence of the authors.

"The various changes in each of the 25 types of machines and the conclusions of the authors with respect to their separate and combined effect on quality values are set forth fully in the detailed studies of each machine contained in this report."

required for a specific structure can be substantially less today than it was before these changes in specifications and in design requirements. At the same time efficient, wide flanged shapes were introduced following the development of new types of rolls for I beams; these new shapes have also permitted lighter and more economical design.

Many other criteria of quality are subject to some sort of concrete measurement or specification. Among these may be listed the fiber content or construction of cloths, the fabric and some aspects of the workmanship of apparel, the leather used in footwear, the quality of certain foods for which grades have been established, the metal content of silverware, etc. All of these elements are to some extent physically determinable. It is manifestly impossible to compile a complete list.

As a rule it is difficult or impossible to translate these quality changes into price equivalents; the significance of price indexes based upon quoted prices is limited accordingly. For automobiles, which are of course exceedingly complex, there has been an attempt to devise a price index which would show changes not only in price but also in weight, wheel base, and horsepower expressed in terms of price. The technique used involves many assumptions and a complex statistical procedure; it is mentioned here merely to illustrate the variety and significance of the many components of quality.¹³

In addition to variables of this kind, there is a wide variety of less tangible factors entering into the concept of quality which cannot yield to any form of precise specification. Yet these intangible elements are often of primary competitive importance; they may largely determine the consumer acceptance of a product and must be considered in any interpretation of price behavior. In the case of apparel, for example, the consumer is more interested in the elusive element of style than in physical specifications of cloth or workmanship. Similarly in the sale of food, the purely subjective factor of taste or flavor may largely determine the popularity or failure of the product. Reverting again to automobiles, the success of a model may be more directly affected by the design or ornamentation of its hood than by the efficiency of its carburetor. The color of bathroom fixtures may exercise a not inconsiderable weight upon a prospect's decision to purchase or rent a home.

Some of these elements of style, appearance, or comfort may have a relation to objectively measurable characteristics. For example, it may be that most consumers prefer the flavor of canned foods meeting the grade A requirements of the Bureau of Agricultural Economics to those which would be classed as grade C. Attractive style is often associated with superior workmanship. Yet such relations are often fortuitous. A high quality grade is not a necessary guarantee of desirable flavor; conversely, many may prefer the flavor of certain grade C products to others classed in grade A. In general,

¹³ Andrew T. Court describes this attempt to devise a hedonic price index in *The Dynamics of Automobile Demand*, op. cit., pp. 99-117. His procedure was based upon computing equations of multiple regression for price in terms of weight, wheel base, and horsepower for the standard models of all the more important makes of cars during each year. This technique was designed to determine the valuation placed by the market upon each of these factors. Court listed, in addition, various other determinable elements of quality, such as tire section, the period of the front spring, front seat width, top speed, rate of deceleration and acceleration, rate of depreciation, etc. Of course any important change in design affecting the significance of any of these elements, such as the introduction of a new lightweight structural alloy, would seriously impair the usefulness of an index of this kind.

the preference or whim of consumers cannot be confined within rigid, definable categories.

It is apparent, then, that the range of quality competition may extend from such precisely measurable characteristics as durability, operating economy, tensile strength, or fuel value to such relatively indefinable elements as taste, style, comfort, or exclusiveness.

The degree to which any of these factors is actually emphasized in business sales strategy varies widely for different commodities. Thus, in sales to expert buyers (e. g., industrial, institutional, or Government purchasing agents) technical specifications and tested characteristics of performance are usually more important than such elements as style or appearance. In dealing with the comparatively untrained ultimate consumer, on the other hand, less stress usually is laid upon performance data and more upon style, taste, and eye-catching features.

The focus of competition is materially affected by the degree to which any element of the transaction has become standardized by business practice, or custom, or by Government regulation. Thus it has been pointed out that price uniformity favors the shift of competitive pressure into nonprice channels. Similarly the standardization of any element of quality necessarily reduces its value as a selling argument. The increase in tensile strength of structural steel is of considerable importance in the interpretation of price statistics; however, since all steel plants are equipped to produce the same grade of steel, it is not a basis for rivalry between them.

To the individual seller, therefore, certain phases of quality competition involve problems similar to those which have been described in connection with price competition. Where changes in quality are such that they can be accurately measured and precisely duplicated, their efficacy as a competitive weapon is thereby limited.

The following quotation expresses this dilemma which faces rival sellers when their products approach uniformity:

The selling of refrigerators requires the massing of all conceivable sales influences. It becomes evident to one who compares the methods of the leading companies that mere sharp angles will not sell refrigerators any more. As an industry matures, angles disappear and products approach uniformity. Advertising at the same time takes on a similarity.

Probably nothing is so striking about the refrigerator advertising as its similarity. Probably no one feels this more keenly than the advertisers themselves. Assuming that Joe Doakes, the common man, has an analytical mind, he doubtless compares the advertising of the leading makes with growing confusion. It is certainly impossible for him to decide from the advertising which of them is best for his purposes.¹⁴

Consequently, there has been some tendency for sales emphasis to shift to these elements of quality which cannot be so readily imitated, particularly for consumers' goods. Sellers of groceries rarely mention their conformity with government standards of quality; sellers of dresses do not usually emphasize fiber content;¹⁵ cosmetics are commonly sold without reference to the quality of their ingredients. Instead it is flavor, style, or attractive containers which constitute the focus of interest. Distinctive appeal is far more readily attained on the basis of the latter elements of quality than on that of the former, and is subject to ingenious variation to maintain leadership.

¹⁴ *Printers' Ink Monthly*, August 1937.

¹⁵ There has been a growing tendency to indicate the fiber content of apparel on the label, partly as a result of Federal Trade Commission activity. However, style usually remains the primary form of competition.

Guarantees.—Closely akin to quality as a basis for competition are guarantees offered by the seller. For example, an important consideration in connection with the purchase of an automobile is the duration of the period during which the seller guarantees to remedy any defects free of charge. This is perhaps even more important in the case of used cars than in the new car market. The average purchaser would prefer to pay substantially more for an automobile purchased from a reputable dealer than for one bought directly from its private owner, because of the possibility of recourse in the former case for defects which are not observed at the time of purchase. Automobile tires have already been mentioned as an outstanding example of the importance of the guarantee. In the case of electric refrigerators the general practice is to guarantee replacement of cabinets, shelves, trays, accessories, refrigeration unit, and controls in case they become unsatisfactory within one year of purchase due to any defects in manufacture. In addition, the refrigeration unit is commonly guaranteed for an additional 4 years. In some cases this latter guarantee is included as part of the purchase price. In others, the guarantee is optional with the purchaser; he can, if he wishes, pay an additional \$5 for this added protection. Here there seems to be a direct equivalence between the price difference and the guarantee.

From the competitive standpoint, simple guarantees of this character are subject to somewhat the same limitations as price appeal. Their terms can be matched exactly; once a practice has become uniform in the industry, the offer of the guarantee is no longer a competitive asset. Thus, the present system of refrigerator guarantees seems to have become the general practice in 1936. The effect of this uniformity is commented upon in an editorial in a trade publication:

"IS THE 5-YEAR GUARANTEE NECESSARY

"A recent trip into the field reveals the fact that electric dealers are highly dissatisfied with the epidemic of 5-year guarantees which seem to have broken out in the national advertising of the electric refrigerators.

*"Originally the guarantee found an excuse for itself in that it was the exclusive promise of one company and so formed a sales argument for the salesmen handling that line. Now, when practically every manufacturer makes the same promise, it does not even offer a talking point against rival makes."*¹⁶ (Italics supplied.)

Other common forms of guarantee are often important aspects of the transaction. Thus, certain sets of china and glassware are sold with the guarantee that additional pieces can be purchased as desired, usually for stipulated periods of years. These so-called open sets may sell for substantially higher prices than other sets of identical quality.

In the wholesale markets, an important form of guarantee is the guarantee against price decline. For example, the purchaser of fertilizer may be protected against any reduction in the price level during the balance of the selling season. Sometimes such guarantees extend only to price changes by the specific producer involved; sometimes the buyer is protected against any price reduction initiated by any important competing seller. Guarantees of this latter kind greatly limit, if they do not eliminate, the scope of price competition. They make it unnecessary for the purchaser to compare competing price offers or to delay his buying in anticipation of future market declines.

¹⁶ Electrical Merchandising, December 1936, p. 22.

Price guarantees may also have the collateral effect of reducing price flexibility during the periods covered. Since price cuts apply not only to future but past sales, the reluctance of sellers to reduce prices is correspondingly increased.

PRICE LINES

The foregoing pages have described the multiplicity of nonprice factors which can be varied to furnish a basis for competitive rivalry and the variety of industries in which they appear. It is important to emphasize that the presence or absence of price competition is not of itself a criterion of monopoly or collusion. While it is probably true that active price competition is infrequent in monopolistic markets, it is also possible for competitive rivalry to center largely or exclusively upon nonprice elements even in highly competitive industries.

The nature of the commodity may be such as to make price comparisons difficult and emphasis upon nonprice factors logical. Where this tendency exists, it may be reinforced by the development of conventional patterns of business practice. The so-called price lines which characterize the retail and wholesale markets for a fairly wide variety of commodities furnish an outstanding example of such crystallization of business custom.

Price lines are most commonly associated with the apparel market. In the case of women's dresses, for example, a series of definite wholesale prices has become established by the accumulation of habit and tradition. These are:-

\$1.87½ each		\$10.75 each
2.25 "		12.75 "
2.87½ "		14.75 "
3.75 "		16.75 "
4.75 "		19.75 "
6.75 "		22.75 "
7.75 "		29.75 "
8.75 "		39.75 and over

Manufacturers and wholesale buyers of dresses have come to accept these lines as virtually immutable,¹⁷ except that new lines may be added when extreme changes in cost occur. They are rarely, if ever, considered subject to modification by bargaining. In planning production, the manufacturer carefully estimates the material and labor costs which will be required to produce a desired model and then makes such modification in the design as will be necessary to permit him to sell the product at one of these accepted lines. The competition between two manufacturers producing, say, a \$6.75 dress will center not upon the price, but upon the quality of materials, the quality of trimmings, the workmanship, and the amount of style. The efforts of the buyer similarly will be concentrated upon obtaining the maximum value at a given price and not upon breaking down the price line itself.

It is probable that even rigidly established customs of this sort may be somewhat shaken during periods of severe economic stress as, for example, during the buyers' market which prevailed during the trough of the depression. Thus, it may be significant that the mem-

¹⁷ The prices listed are gross prices subject to standard trade and cash discounts.

bers of the corset and brassiere industry deemed it advisable to stipulate rigid adherence to accepted price lines as a code provision during N. R. A. The clause in question follows:¹⁸

Wholesale prices.—To maintain established trade practice, and to limit the multiplication of numbers, but without any attempt at price fixing, each person being free to determine the value to be given at each price, the following shall be the wholesale prices, per dozen, for sale to retailers (except chain stores selling up to one dollar (\$1) retail), and no intermediate prices may be used:

\$2.00 doz.	\$8.50 doz.	\$27.00 doz.
2.25	10.50	30.00
3.25	12.00	33.00
4.00	15.00	36.00
4.25	16.50	42.00
4.50	18.00	48.00
6.00	21.00	54.00
7.00	22.50	60.00
8.00	24.00	66.00 and up.

Price lines in the wholesale market are reflected in a similar though perhaps slightly less invariable practice at retail. This is illustrated by the prices reported by the Retail Price Division of the Bureau of Labor Statistics, covering the quotations of representative retailers in 32 cities. For example, 114 quotations for women's medium quality, woven elastic girdles, retailing from \$2.95 to \$5.50, showed the following distribution as of June 15, 1938:

Price:	Number of quotations	Price—Continued.	Number of quotations
\$2.95-----	4	\$4-----	1
\$2.98-----	2	\$4.69-----	1
\$3.39-----	1	\$5-----	67
\$3.50-----	32	\$5.50-----	2
\$3.59-----	1		
\$3.95-----	2	Total-----	114
\$3.98-----	1		

In other words, 99 of the 114 price quotations were concentrated at 2 figures—\$3.50 and \$5. Only 15 quotations, or 13 percent of the total, were at intermediate figures.

Similar concentration of retail prices exists for many other apparel items. For example, 396 quotations were reported for women's hose ranging from 69 cents to \$1.15 per pair. Of these, 119 were at 79 cents and 154 at \$1. These two prices alone accounted for 61 percent of the total.

Although apparel, and particularly women's apparel, furnishes the most conspicuous example of price lining, the custom is by no means confined to these fields. Such products as electric refrigerators, vacuum cleaners, and radios also show a distinct tendency toward the establishment of a limited number of price lines. Table 21 in chapter IV (p. 162) illustrates the effect of this practice in the case of refrigerators. During 1939 all major producers with one exception quoted list prices which were almost identical for each size.

The retail prices of vacuum cleaners are usually spaced at \$10 intervals between \$39.95 and \$79.95. It is apparently the opinion of the trade that intermediate levels, such as \$42 or \$56, would meet with customer resistance and could not be used. Similar variations apply to radios.¹⁹

¹⁸ National Recovery Administration, Codes of Fair Competition, vol. I, p. 76, Corset and Brassiers Industry, sec. 9 (i).

¹⁹ The foregoing and additional examples of price lining are described in more detail in appendix II.

The influence of price lines upon the pattern of competition has been suggested above. In both the wholesale and retail markets the buyer's choice is confined to selecting the best possible value at a given price rather than to comparing prices for similar products. The force of this generalization is, of course, limited by the size of the interval between price lines. For example, the consumer may find a \$3.50 girdle as satisfactory as one offered for \$5; in that case price becomes the paramount consideration. In general, however, there is an appreciable gradation of quality comparable to that of price; in other words, the best article offered at \$3.50 is of distinctly lower grade than the poorest offered at \$5. Consequently, though price is not eliminated as a consideration, the scope of price competition is limited.

Frequently another consideration reinforces the emphasis upon nonprice factors. Many manufacturers, particularly in the field of apparel, concentrate their efforts upon not more than one or two price lines. For example, a women's dress manufacturer may be spoken of as a "\$10.75 house" or a "\$14.75 house." This means that the firm in question regularly produces garments only within the price line specified. Any changes in costs of production will be reflected in changes of the character of the garment and not in modifications of the price. For such one-price houses nonprice channels are the only form of competition available.

The practice of price lining may affect market patterns not only for the finished products sold at the price lines, but also for the major raw materials entering into these finished products. Thus Mr. S. J. Kennedy points out that the prevalence of price lines for apparel and for piece goods is reflected in the gray goods market. It acts to retard the responsiveness of finished goods prices to changes in textile manufacturing costs and means that the advantage of certain savings will not be passed on to the consumer promptly. Thus it introduces distinct rigidity into the market:

* * * It is patent that seasonal fluctuations in prices of gray cloth, even when as great as 1 cent per yard, do not always reach the ultimate consumer in the form of lower prices. If the given cloth were converted into printed percales to be sold by the converter at 14½ cents per yard and retailed as yard goods at 25 cents per yard, a reduction of 1 cent per yard in the gray, if passed on by the converter to the retailer would have no effect whatever under normal conditions upon the price paid for the cloth by the consumer. It is not a large enough cut to fit the cloth into a 19-cent bracket, which is the next lower price bracket used generally on piece goods in the trade. The only result would be to increase the margin to the retailer.

Likewise, if the cloth went into the hands of cutters-up instead of their selling the garment at a lower price, they would continue the sale at their fixed wholesale price, and at best might put on more or better trimmings or employ a more intricate pattern of garment.

In other words, by the time the product reaches the consumer, price changes of a temporary or minor character would have been absorbed by the channels of distribution so that there is no certainty that such savings in manufacturing costs as can be secured from the use of more efficient machinery will have been passed on to him. The increasing price inflexibility of our distributing system, as goods pass from primary manufacturers to the ultimate retailers, makes it increasingly unlikely that the consumer will get the benefit of these savings unless they are drastic enough to move the product out of one price bracket into a lower one.

Conversely, it should be noted that increases in price experience similar retardation. The same increasing price inflexibility, as goods pass from primary manufacturers to retailers, operates to prevent a price rise when costs are increased. An increase of 1 cent per yard in gray cloth costs would, under certain conditions, be absorbed by the various operators out of their gross margins before the goods

reached the retail counter. Under present conditions of a high degree of organization in the distributing trades, whereby the combined buying power of many individual retail outlets is applied jointly to the manufacturer, the latter must absorb more than his share of this reduction in price spread. In other words, his own prices will generally be less flexible than his costs. When prices reach a certain level, he will be unable to raise his price further and still get any business on his product.

However, before such a level is reached where his customers are no longer able to use the product for existing price brackets, the primary manufacturer would probably have switched to a lower construction; for example, from 80 by 80 print cloth to 68 by 72; or if the product were a nonstandard cloth, he would have "cut" the construction by removing a few ends or picks, reducing the width, using lighter weight yarns, or any of the other many means for deteriorating quality. On the other hand, if the price rise were a large one, enough to throw the cloth into a higher retail price bracket, then the manufacturer could get a higher price and maintain his profit margin; however, the volume on that construction would be reduced and he would be under the necessity of developing a cheaper cloth for the lower price bracket in which it had formerly fitted.

Put in another way, a price rise due to external factors such as a rise in cotton prices or a manufacturers' sales tax, would put the manufacturer under the necessity of finding a way to make the cloth at lower cost, to offset the increases in these other elements of prime cost. Price pressure from retail distributors would tend to prevent the manufacturer from raising his price until prices were practically equal to his direct costs. As that level was approached, either of two things would happen: (1) The cloth might be forced into a higher retail price bracket—for example, from 29 cents to 39 cents per yard as piece goods over the counter, or from a \$1 garment to \$1.95—in which case the volume would be materially reduced, and a lower construction would be developed for the old price bracket; or (2) the cloth might be progressively cheapened by "cutting" the construction as the price rose, and be kept at about the same price level.

* * * * *

To what degree such "cuts" in construction lower the actual output of the industry or give consumers less for their money is not a problem to be settled here. In large measure it is a problem in home economics, and is to be decided as a result of research concerning relative wearing qualities of various constructions, and the extent to which retail stores give actual value for money received.

It must not be overlooked, however, that this flexibility of quality, by which manufacturers are able to adjust to price fluctuations without lowering real manufacturing costs, permits the industry to meet fluctuating price conditions in the cotton market with a minimum of internal friction. It is made possible only by the continued lack of knowledge on the part of the consumers (nonindustrial) of what actual quality of cloth is.²⁰

For some products, price lines are maintained by adjusting quantity rather than quality to changing conditions. For example, the retail price of bar chocolate is usually either 5 or 10 cents. The disinclination of many customers to bother with odd pennies is undoubtedly one of the causes for the crystallization of this custom. Changes in the size of the bar offered by a leading producer follow.

TABLE 3.—*Changes in size of chocolate bars*

Date of change	Net weight per bar			
	Plain		Almond	
	5 cents retail	10 cents retail	5 cents retail	10 cents retail
Jan. 1, 1926.....	1 $\frac{3}{8}$	2 $\frac{3}{4}$	1	2
Apr. 1, 1930.....	1 $\frac{3}{8}$	2 $\frac{3}{4}$	1 $\frac{1}{4}$	2 $\frac{1}{2}$
Oct. 10, 1931.....	2	4	1 $\frac{3}{8}$	3 $\frac{1}{4}$
Sept. 2, 1932.....	1 $\frac{7}{8}$	4	1 $\frac{1}{2}$	3
Nov. 4, 1932.....	1 $\frac{7}{8}$	3 $\frac{3}{4}$	1 $\frac{1}{2}$	3

²⁰ Stephen Jay Kennedy, *Profits and Losses in Textiles*, pp. 168-170.

Similarly, it is understood that the contents of packaged goods sold by limited price variety stores are changed from time to time in order that the conventional 5-cent, 10-cent, and 25-cent lines may be rigidly maintained.

Bread affords a particularly striking illustration of the way in which a price line can be maintained by varying quantity. A total of 1,132 retail price quotations for bread from stores located throughout the country were reported to the Retail Price Division of the Bureau of Labor Statistics as of February 1939. Of these 1,132 quotations, 808 or 71 percent were at 10 cents. In 8 of the 9 major geographic census areas, the 10-cent loaf accounted for more than 50 percent of the total number of quotations. In contrast to this uniformity of price, the size of the loaves offered for 10 cents varied from 16 ounces to 24 ounces.

Price lining is also characteristic of many noncommodity prices. Examples may be drawn from common experience. Thus, in many localities, the charge for dry cleaning a suit of clothes is apt to be either 75 cents or 39 cents; intermediate prices are unusual. The usual price for haircuts is either 35 cents or 50 cents. Frequently the price of services is related to the size of convenient monetary units (e. g., 5 cents or 10 cents) as in the case of shoeshines or a cup of coffee in a restaurant.

The foregoing examples show clearly that the practice of price lining definitely influences the focus of competition. It does not, however, eliminate price competition entirely, but rather restricts its scope.

In general, price lines are more rigidly adhered to in the wholesale than in the retail markets. Yet, even in wholesale markets, prices are shaded from time to time. In general this is done by modifying one of the collateral terms of sale. The most important of these is the so-called cash discount. In most apparel lines, for example, it is a custom to allow a discount of 8 percent, 10 days E. O. M.²¹ In reality, as the size of the discount indicates, this is a combination trade discount and cash discount. It constitutes an important modification of the nominal wholesale price quotation. There is some evidence that it is not adhered to quite as rigidly as the nominal price line itself. It is commonly believed that price concessions are sometimes granted, particularly to very large buyers, by increasing this discount, usually to 10 percent. Indirect price concessions may also be granted by the use of other devices as, for example, by absorbing freight on certain shipments.

In general, however, price variations of this kind in the wholesale market are comparatively minor. In the retail market, on the other hand, somewhat greater variations occur. Thus the retail prices listed above (p. 71) reveal a material number of exceptions to the established price lines. Presumably these reflect variations in the pricing policy of different retail outlets. Retailers whose operating costs are lower than the average may operate at lower than normal mark-ups and thereby deviate from the established lines.

These cases are all, however, exceptions to the general rule. Broadly speaking, the practice of price lining necessarily diverts

²¹ I. e., the discount applies if payment is made not later than the 10th day of the month following that during which the sale was made.

competition into nonprice channels. The efforts of the producer and the choice of the consumer both must accept prices as constant and center upon such factors as quality as the significant variables.

It should again be emphasized that this conventional restriction of price competition is in no sense associated with concentration or with any manifestations of monopoly power. Most of the industries in which price lining is prevalent are composed largely of small enterprise and are by almost any criterion highly competitive. The highly diversified nature of the product makes emphasis upon non-price factors almost inevitable.

There is no evidence that the practice of price lining, as such, is notably inefficient from the point of view of the consumer or the economy. It apparently introduces certain undesirable rigidities in the market for apparel and other consumers' goods which, in times of rapidly changing costs, hamper market adjustments. However, these rigidities do not appear to be sufficiently serious to create major issues of public policy. Price lining, therefore, affords an illustration of the manner in which factors inherent in the market more or less naturally lead to emphasis upon nonprice elements as the focus of business rivalry without materially affecting the costs of production or distribution or the efficiency with which consumers' wants are satisfied.

ADVERTISING, BRANDS, AND TRADE-MARKS

The practice of price lining does not of itself introduce any new elements into the transaction. Given a situation in which the product of rival sellers necessarily differs in quality and style, there has merely been a decision to concentrate competitive effort upon these elements and to accept price as constant. This procedure represents a simple choice of emphasis between elements which were in any event present, and does not of itself involve any major changes in the cost of manufacturing or distribution.

In contrast, increasing use of advertising, brands, and trade-marks has far broader implications. It represents the introduction of new elements into the transaction; elements which are not necessarily inherent in the nature of the commodities offered for sale, and it has far-reaching effects upon the functioning of the economy.

In one sense, the purpose of advertising is to disseminate information as to those quality features in which the prospective purchaser might be interested, while brands and trade-marks furnish a ready means for identifying the merchandise in question. To an extent, therefore, advertising and branding may be considered a phase of the tactics involved in competition based upon quality.

However, advertising is rarely, if ever, content with presenting a dispassionate, factual description of the quality or merits of an article; nor is the use of a brand merely a device to permit the ready identification of a product having certain specific qualities.

Essentially a brand or trade-mark is a device used by a seller to distinguish his product from similar competing articles. Advertising is used to persuade the prospective purchaser that the product has certain desirable characteristics which are unique or which it possesses in greater measure than rival merchandise. If this effort is successful, a demand is created for the article associated with its brand or

trade-mark, and purchasers will specify such a brand or trade-mark in their buying. Thereby two related ends may be accomplished. The establishment of consumer preference for a specific brand yields its owner a certain assured sales volume. At the same time the product for which preference has been established is shielded to a greater or lesser extent from the impact of direct price competition.

The effectiveness with which the use of trade-marks and brand names can insulate a product against direct price competition with similar articles made by others varies materially for different kinds of goods. Probably the most important determining factor, although it is but one of many, is the relative ease or difficulty which the consumer encounters in making comparisons between the actual intrinsic merits of rival merchandise. In those fields in which such comparisons are relatively simple, or in markets where buyers are well equipped technically, there is a pronounced tendency to switch to competing brands as soon as material price differences appear. However, where for one or another reason the consumer is unable to compare rival products intelligently, the effective use of brands or trade-marks frequently permits very wide price differences to be maintained between virtually identical products. In such fields it is essential to appraise brand significance in interpreting price behavior.

Trained buyers—industrial, institutional, or governmental—are often well equipped to compare competing products on their merits. Sometimes, as in the case of Government agencies, their judgment is aided by access to the services of well-equipped laboratories. In cases of this sort, the effectiveness of brands is limited. The buyer is unlikely to accept advertising representations without investigation, particularly if appreciable price differences appear between similar products bearing different brands.²²

The average household consumer is in a totally different position. He lacks the training, the facilities, and the time required for technical comparisons of the merits of competing merchandise. Even in fields in which commodity standards or methods of rating exist, these are often inadequate or misleading. Thus Mr. L. R. Walker, testifying before the Temporary National Economic Committee, asserted that technological changes had made the prevailing system of measuring the capacity of warm-air furnaces for homes largely useless as a guide to their heating capacity, but that many members of the industry opposed the introduction of more meaningful standards. According to Mr. Walker:

I would say this: that the standard that the consumer has been taught to use is no measure whatever of the rating of the product he gets. In other words, because the industry for many years all made a similar product they used one measure. Now, as we have learned to improve that product, they are still using that same measure and it doesn't at all typify the output of that product. More than half of the industry is still making the old product and opposes anything that changes that standard.²³

The interest of the consumer in obtaining more adequate information regarding the character of commodities on the market has resulted in the establishment of a number of organizations whose purpose is to supply the consumer with technical guides in his purchasing. However, there are limits to the effectiveness with which

²² See Temporary National Economic Committee Hearings, Part 8, pp. 3440-3452.

²³ *Ibid.*, p. 3422.

such private organizations can perform this function. Moreover, in the case of several of these organizations, there even seems to be some question as to the good faith of their activities.²⁴ Consequently, the average consumer is forced to a large extent to rely upon advertising claims and to base his buying upon brand names and trade-marks.

In grocery products, for example, a distinction must be drawn between such relatively standard commodities as sugar or rice, and those in which there are wide variations of quality, flavor, and contents, such as canned peas or coffee. Even the former may be and often are purchased by brand, but as soon as any material price differences appear the average housewife is almost certain to switch to a cheaper variety. In the case of the latter products, however, even material price differences may not suffice to induce her to change her habits of purchasing. Taste is so subjective an element that comparisons between different brands of, say, canned goods are inevitably difficult. Moreover, choice is complicated by the general refusal of packers to adopt grade labeling for canned products, as well as by the multiplicity of can sizes which hampers any attempt to match prices on a uniform basis.²⁵

TABLE 4.—*Prices and quality grades for specified brands of canned foods*

GREEN AND WAX BEANS

Brand	Price per pound	Quality grade	Brand	Price per pound	Quality grade
A. & P.	\$0.13	A	Iona	\$0.11	C
Asco .....	.14	B	Premier (wax) .....	.16	B
Blue Label .....	.19	A	Shrivers .....	.13	B
Blue Ridge .....	.08	C	Stokely .....	.11	C
Crown of Maryland .....	.08	C	Sweetheart .....	.13	B
Farmdale .....	.11	C	Torch's .....	.25	A
Fert .....	.15	B	White Rose (wax) .....	.18	C
				.17	B

BARTLETT PEARS

Approval	\$0.10	B	Libby	\$0.13	C
Asco .....	.11	A	Lyric .....	.10	C
Blue Label .....	.16	B	Mission .....	.09	C
D. G. S. ....	.18	C	Premier .....	.12	B
Del Monte .....	.13	B	Ray Crest .....	.13	C
De Mand .....	.15	C	S. & W. ....	.20	C, A
Hunt .....	.14	A	White Rose .....	.20	B
Iona .....	.10	C			

TOMATO JUICE

Alice	\$0.066	A (86)	Le Grande	\$0.101	C (78)
Ann Page .....	.096	A (94)	Libby .....	.096	A (89)
Approval .....	.083	D (65)	Phillips .....	.076	C (78)
Asco .....	.080	A (90)	Ritter .....	.075	A (87)
Beech-Nut .....	.118	A (90)	Scott .....	.057	A (92)
Campbell .....	.096	A (92)	Stokely .....	.087	A (93)
College Inn .....	.099	A (90)	Webster .....	.072	A (96)
Blackwell & Crosse .....	.108	C (84)	Welch .....	.15	A (94)
Heinz's .....	.106	A (94)	White Rose .....	.118	C (82)

¹ Number in parentheses is the numerical grade.

Source: Hearing before the Committee on Coinage, Weights, and Measures, House of Representatives, on H. R. 6964, Standard Metal Container Act of 1937, Mar. 15 and 16, 1938, pp. 20-21.

²⁴ The Federal Trade Commission is at present (Spring, 1940) proceeding against two organizations which purport to furnish the consumer with technical buying information. See complaints of the Federal Trade Commission in the matter of Albert Lane, an individual, trading as Consumers' Bureau of Standards, Docket No. 3718, and in the matter of Hearst Magazines, Inc., Docket No. 3872.

²⁵ See Temporary National Economic Committee Hearings, Part 8, pp. 3346-3355.

Some of the consequences of this situation are reflected in table 4, which is based upon data presented at recent congressional hearings. The price per pound of different brands of Bartlett pears, tomato juice, and green and wax beans, is compared. The quality grades based upon the standards of the Bureau of Agricultural Economics are also indicated. It is apparent that there is no significant correlation between price and quality. Thus, one brand of grade A beans costs approximately twice as much per pound as another brand meeting the same specifications. Products of lower grade sold for more than those of higher grade.

An informal questionnaire recently circulated among a small group of consumers in Washington and Boston, by the members of the Temporary National Economic Committee staff, gives some indication of the extent to which brand preference prevails in the grocery market. This questionnaire comprised a list of 60 common prepared foods.²⁶ Consumers were asked to specify the degree to which their purchasing was affected by brand preferences in accordance with the following instructions:

Mark the item "a" if, in buying, you simply ask for it by its general name without giving attention to its brand or trade-mark. (E. g., "Give me a loaf of bread.")

Mark the item "b" if you usually ask for a specific brand and buy it if it is *no more* expensive than competing brands but are still usually willing to accept substitutes for trial or to save a cent or two.

Mark the item "c" if you ask for it by brand name and insist upon it, *despite small differences* in price, but are nevertheless willing to experiment with other brands and to shift if price differences become material.

Mark the item "d" if you insist upon a specific brand *despite material price differences* between it and competing brands and if you are not, generally speaking, willing to experiment with other brands.

Mark the item "x" if you do not use it, or if your experience with it has been too meager to furnish a basis for judgment.

NOTES

(1) By price difference is meant, not only differences in the price itself but also differences in other material factors such as quality, grade, size of can, attractive premiums, and the like.

(2) The habit of buying in a specific store because you like the products handled there is not, for this purpose, to be considered equivalent to buying by brand. For example, if you like the butter handled by a certain grocery and regularly buy it there, but if it is sold loose or if you are unaware of its brand name, you are *not* buying by brand. On the other hand, if you go to that store because it happens to carry, say, Blue Valley Butter, you *are* buying by brand.

The results are summarized in table 5. Particular attention is directed to the frequency with which consumers indicated that they would insist upon their favorite brand despite material differences in price. Thus, in the case of such products as tea, canned salmon, baked beans, and flour, more than a third of those answering the question indicated that they would insist upon their favorite brand regardless of price and another third would change only if the price inducement were material.

²⁶ The list was selected from those prepared foods whose prices are reported in the Bureau of Labor Statistics wholesale price index. This was done to permit comparisons of price behavior.

TABLE 5.—*Extent of consumer brand preference for prepared foods*

Name of commodity	Total reporting	Number of consumers who purchased—			
		Without regard for brand or trade-mark	With regard to brand or trade-mark		
			Total	By brand if not higher in price	By brand unless there was a very marked price differential
					By brand regardless of price
Dried apples.....	16	15	1	1	
Powdored milk.....	5	4	1	1	
Pretzels.....	24	19	5	2	1
Dried peaches.....	22	16	6	2	2
Cured beef.....	35	25	10	4	3
Dried apricots.....	30	20	10	4	2
Dried currants.....	20	15	5		3
Black pepper.....	50	34	16	6	4
Rice.....	50	30	20	8	10
Corn meal.....	35	19	16	7	8
Granulated sugar.....	55	30	25	11	10
Fresh meat.....	54	36	18	4	4
Dressed poultry.....	48	32	16	3	6
Cornstarch.....	42	22	20	11	4
Vinegar.....	50	26	24	8	12
Hominy grits.....	14	6	8	4	2
Peanut butter.....	37	17	20	6	10
American cheese.....	53	26	27	7	8
Sweet crackers.....	37	12	25	13	8
Olive oil.....	34	14	20	7	10
Grape jam.....	28	13	15	4	5
Canned apples.....	22	8	14	5	6
Dried prunes.....	42	17	25	6	12
Lard.....	37	14	23	8	9
Oleo oil.....	6	3	3		2
Canned cherries.....	43	11	32	12	16
Canned string beans.....	38	9	29	12	13
Soda water.....	24	7	17	7	6
Soda crackers.....	52	16	36	10	13
Macaroni.....	50	16	34	8	17
Canned apricots.....	42	10	32	12	14
Canned pears.....	48	11	37	14	18
Canned spinach.....	30	6	24	8	13
Canned tomatoes.....	48	11	37	12	19
Cured ham.....	49	13	36	10	18
Oleomargarine.....	10	4	6	1	2
Condensed milk.....	26	8	18	5	4
Corn flakes.....	41	11	30	12	5
Canned peaches.....	50	8	42	16	18
Canned pineapple.....	51	9	42	16	15
Dried raisins.....	41	13	28	5	13
Canned corn.....	53	11	42	12	25
Salt.....	55	18	37	10	11
Molasses.....	37	9	28	8	14
Butter.....	53	12	41	12	13
Wheat cereal.....	37	6	31	11	12
Evaporated milk.....	36	10	26	4	8
White bread.....	56	14	42	8	16
Rollod oats.....	41	6	35	10	13
Canned peas.....	47	6	41	10	22
Bacon.....	53	11	42	7	21
Ginger ale.....	45	7	38	12	11
Grape juice.....	37	7	30	7	12
Cocoa.....	46	9	37	10	12
Canned asparagus.....	45	7	38	12	14
Family flour.....	53	8	45	10	13
Canned baked beans.....	50	4	46	12	17
Tomato soup.....	51	3	48	13	21
Canned salmon.....	50	8	42	6	18
Tea.....	54	8	46	8	17

Source: Bureau of Labor Statistics.

In the field of apparel, price comparisons are in some ways more difficult than in that of groceries. To the average consumer, such matters as thread count or tensile strength are mysteries.²⁷ Few buyers will examine a shirt to see how many stitches there are per inch. Many do not even know that such terms as "satin" or "crepe" or "velvet" refer to weave and not to fiber content. Consequently, there is often a substantial difference in prices between apparel sold under a well-known label and similar more obscure brands. For example, according to data compiled by the Retail Price Division of the Bureau of Labor Statistics, the average price of one nationally advertised brand of men's business shirts during December 1937 was \$2, while the average for all other brands meeting the same general set of specifications was \$1.61.

Frequently, apparel manufacturers sell identical products under several different brands, one of which may bear their own nationally advertised label, while the others bear distributors' labels. Generally the product sold under the manufacturer's label commands a substantial premium both in retail and wholesale markets, over that bearing the distributor's label. In the case of hosiery, for example, according to the Knit Goods Weekly,²⁸ the difference between nationally advertised and private label merchandise is normally 75 cents per dozen. Prior to 1938 the difference had been \$1.25 per dozen. Since the product is identical, the differential simply represents the value of the brand.

Similar situations exist in many other lines. A recent investigation by the Federal Trade Commission showed that the Goodyear Tire & Rubber Co. was selling tires to Sears, Roebuck & Co. under the brand "All State" which were of the same quality as those marketed by the Goodyear Co. under its own "All Weather" brand. The difference in wholesale prices between these two brands during the period from 1927 to 1933 varied between 29 and 40 percent. On the retail market the "All State" brand was generally sold at prices between 20 and 25 percent below the price of the "All Weather" brand.²⁹

In another case the Federal Trade Commission found that the American Featherbed & Pillow Co. marketed their products under the five brand names "Princess," "Progress," "Washington," "Puritan," and "Ideal." In its advertising the manufacturer represented that these products were of different grades in the order named, and correspondingly different prices were charged for each. The Commission found, however, that all these five brands were of the same quality, and that the material price differential between the "Princess" and the "Ideal" brand reflected a difference in the label only.³⁰

Similarly, it is understood that there has been a difference of \$50 in retail price between virtually identical refrigerators sold under the manufacturer's label and that of a large distributor.

Probably the outstanding example of the degree to which trademarks and brand names can grant immunity from price competition is furnished by the drug and cosmetic trade. In this field the average consumer is dealing with something which is to him utterly mysterious. Moreover, it is a field in which experiment is not only diffi-

²⁷ See Temporary National Economic Committee Hearings, Part 8, pp. 3287-3308.

²⁸ Knit Goods Weekly, January 3, 1938, p. 8.

²⁹ Federal Trade Commission, Docket No. 2116.

³⁰ Federal Trade Commission, Docket No. 1129.

cult but may be dangerous. Few consumers have any possible way of appraising the merits of rival drugs. They know nothing of chemical formulas. Few are familiar with the significance of the specifications of the United States Pharmacopoeia. They may be guided by the advice of their physicians or druggists, or perhaps by advertising claims as to the virtues of various preparations.

As a result, very wide price differences are encountered between products of virtually identical chemical composition. Table 6 compares the wholesale prices of identical preparations sold under proprietary and nonproprietary names. On the entire list the aggregate cost of one ounce of each of these products sold under their nationally advertised labels, is \$28.95, while when marketed under their chemical names the price is only \$4.59. Presumably, retail prices show a similar spread. Consequently, the bulk of the price paid by the retailer, and probably by the consumer, represents the value of the brand. The saving for purchases under the nonproprietary name averaged 76 percent.³¹

TABLE 6.—*Comparison of wholesale prices of identical substances sold under proprietary and nonproprietary names*

[Net prices to retailers July 1938]

Brand name	Price per ounce	Chemical name	Price per ounce	Saving under chemical name	
				Amount	Percent
Phenacetin.....	\$0.63	Acetphenitidin.....	\$0.21	\$0.42	66.7
Bayer Aspirin.....	.75	Acetylsalicylic acid.....	.13	.62	82.7
Veronal.....	3.00	Barbital.....	.56	2.44	81.3
Veronal Sodium.....	3.00	Barbital sodium.....	.62	2.38	79.3
Atophan.....	2.75	Anchophen.....	.38	2.37	86.2
Duotal-Withrop.....	1.07	Guaiacol carbonate.....	.29	.78	72.9
Urotropin.....	.25	Metbenamine.....	.13	.12	48.0
Luminal.....	6.90	Phenobarbital.....	.57	6.33	91.7
Luminal Sodium.....	6.90	Phenobarbital sodium.....	.57	6.33	91.7
Trinol-Withrop.....	1.90	Sulphonethylmethane.....	.70	1.20	63.2
Aristol-Withrop.....	1.80	Thymol-iodide.....	.43	1.37	76.1
Total.....	28.95	Total.....	4.59	24.36	76.3

¹ Average, unweighted.

Source: Price data obtained from Blue Price List Section, published by American Druggist, July 1938.

The high degree of immunity from direct price competition which the owner of branded drugs, toiletries, or cosmetics, enjoys is often reflected in a very wide spread between the price of his product and the cost of its ingredients.³² This is particularly true, of course, in the case of nonstandard proprietary items of whose composition the consumer is generally ignorant.

Numerous efforts have been made to compare the retail prices of some of these products with the physical cost of their ingredients. Among the agencies which have conducted such work are the American Medical Association and the Bureau of Health of the State of Maine. A summary of some of these data is presented in table 7.

The items included in this table are in fields which are, in the broad sense, highly competitive. Consequently the very wide spreads and

³¹ For other examples of wide price spreads between trade-marked and unbranded products see Temporary National Economic Committee Hearings, Part 8, pp. 3444-3452, and also Part III of this volume, *infra*, pp. 398-69.

³² Of course this spread is by no means all profit. Much of it represents the cost of advertising and packaging.

lack of any consistent relationship between ingredient costs and prices clearly attest the importance of branding as an aspect of nonprice competition. At the same time they demonstrate the futility of attempting to base price statistics or indexes upon physical specifications for products of this kind. The significance of the brand far transcends that of the constituents of the product or any conceivable criterion of performance.

So far, the discussion has been concerned with the effect of brands upon the price level prevailing at any instant. In addition, however, brands may exert a very definite effect upon the way in which prices behave during a period of time.

TABLE 7.—*Comparison of retail prices of drugs, cosmetics, and foods, with the costs of their ingredients*

Product name	Advertised use	Quantity	Cost of ingredients		Retail price under brand name
			Wholesale	Retail	
Proprietary medicines:					
Carpentier's Compound. ¹	Cure for TB and ulcers of stomach.	Per jar	\$0.50 .....	.....	\$7.00.
Currier's Tablets ² ..	Ulcers of stomach, hyperacidity, general gastric distress.	100 tablets .....	.....	³ \$1.85	\$5.00.
Renesol ⁴	Phenobarbital and baking-soda tablets.	65 capsules .....	.....	⁵ .98	\$4.50.
Electrovita ⁵	Stomach	1 gallon .....	.....	.02	\$2.00.
Mouthwashes: Listerine. ⁶			Few cents .....	.....	About \$1.00.
Dental remedy: Ora-Noid. ⁷	Dental remedy	Per can	\$0.10 .....	.....	\$2.00.
Reducing agent: Germania Herb Tea. ⁸		Per package	\$0.15 .....	.....	\$1.50.
Losser ⁹	Bathing salts	Per package	Few cents .....	.....	\$1.00.
Min-amin ¹⁰	Vitamin food	5 ounces	Few cents .....	.....	\$1.00.
Poinay Rx ¹¹	Salve	8 ounces	About 40 cents .....	.....	\$10.00.
Stardom's Holly-Diet. ¹²	Reducing food	Package	2 cents to 3 cents .....	.....	\$1 to \$2.
Cure for baldness: Downing's Cure. ¹³		4 bottles of different substances.	\$0.65 .....	.....	\$5.00.
Cosmetics:					
Coty's Dusting Powder. ¹⁴		4.708 ounces .....	.....	.157	\$0.75.
Coty's Face Powder. ¹⁵		1.818 ounces .....	.....	.120	\$0.75.
Elizabeth Arden Face Powder. ¹⁶		5.345 ounces .....	.....	.338	\$3.00.
Elizabeth Arden Dusting Powder Venetian. ¹⁶		11.244 ounces .....	.....	.466	\$3.00.
Harriett Hubbard Ayer Face Powder. ¹⁷		2.262 ounces .....	.....	.066	\$0.60.
Harriett Hubbard Ayer Aristocrat Bath Powder. ¹⁷		10.170 ounces .....	.....	.220	\$1.65.
Daggett and Ramsdell Dusting Powder. ¹⁷		4.883 ounces .....	.....	.160	\$0.85.
Daggett and Ramsdell Face Powder. ¹⁷		2.934 ounces .....	.....	.094	\$0.85.
Max Factor Face Powder. ¹⁸		4.584 ounces .....	.....	.118	\$0.75.
Helena Rubenstein Face Powder. ¹⁸		2.644 ounces .....	.....	.100	\$1.00.
Bourjois Sales Corp. Poudre Java. ¹⁹		3.332 ounces .....	.....	.098	\$0.50.
Evening in Paris Bath Dusting Powder. ²⁰		5.020 ounces .....	.....	.164	\$1.10.
Evening in Paris Face Powder with Perfume. ²¹		.....	.....	.174	\$1.10

See footnotes at end of table.

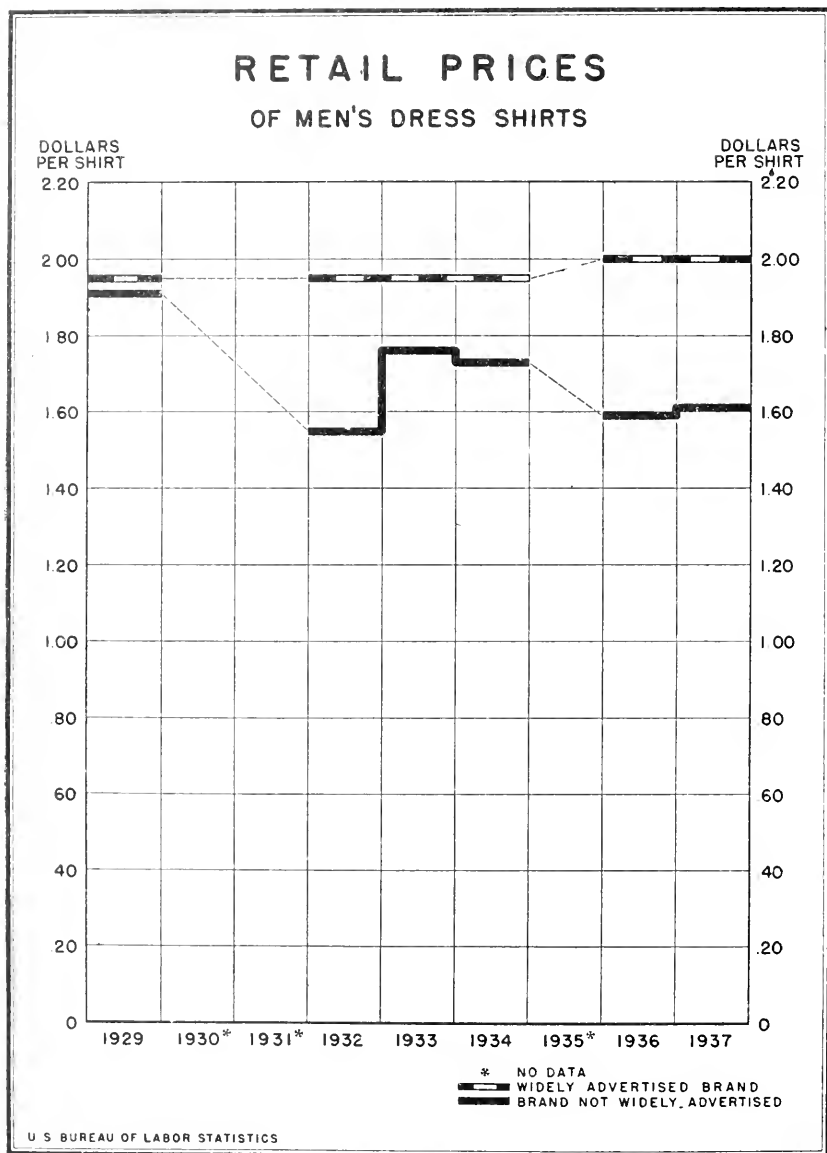
TABLE 7.—Comparison of retail prices of drugs, cosmetics, and foods, with the costs of their ingredients—Continued

Product name	Advertised use	Quantity	Cost of ingredients		Retail price under brand name
			Wholesale	Retail	
Cosmetics—Continued.					
Richard Hudnut Face Powder Marvelous. ²²		2.479 ounces		\$0.065	\$0.55.
Luzier's Face Powder. ²³		1.872 ounces		.077	\$1.00.
Luzier's Cleansing Cream. ²⁴		5.700 ounces		.197	\$2.50.
Luzier's Lu Mar Massago Cream. ²⁴		1.802 ounce		.140	\$3.00.
Luzier's Lutone Skin Cream. ²⁴		2.109 ounces		.061	\$1.00.
Coty Rouge Refill ¹⁴		0.148 ounce		.037	\$0.38.
Max Factor Dry Rouge. ¹⁵		0.300 ounce		.082	\$0.38.
Luzier Rouge ²²		0.317 ounce		.143	\$1.00.
Harriett Hubbard Ayer Cream Rouge. ¹⁶		0.315 ounce		.038	\$0.55.
Elizabeth Arden Venetian Lip Paste. ¹⁵		0.357 ounce		.024	\$1.00.
Springtime in Paris Lipstick. ¹⁹		0.140 ounce		.737	\$1.25.
Bourjois Sales Corp. Lipstick. ¹⁹		0.070 ounce		.031	\$0.55.
Coty's Special Astringent. ¹⁵		4.000 ounces		.071	\$1.00.
Harriett Hubbard Ayer Special Astringent. ¹⁶		11.993 ounces		.088	\$1.75.
Primrose House Skin Freshner. ¹⁸		4.000 ounces		.061	\$0.85.
Luzier Skin Refresher. ²⁴		1.910 ounces		.087	\$2.50.
Elizabeth Arden-Venetian Dermatex Depilatory. ¹⁶		2.323 ounces		.190	\$2.00.
Evening in Paris Perfume. ¹⁹		0.550 ounce		.268	\$2.75.
Springtime in Paris Double Vanity. ²⁰		0.058 ounce		.252	\$1.75.
Barbara Gould Cuticle Remover. ²⁰		0.566 ounce		.053	\$0.55.
Barbara Gould Hand Lotion. ²¹		3.999 ounces		.082	\$0.45.
Food:					
Ovaltine ²⁵		14 ounces		.100	\$0.75.
Instant Alberty's Food. ²⁶		16 ounces		.200	\$1.35.
Chemm ²⁶		16 ounces		.140	\$0.59.

¹ Journal of American Medical Association, vol. 101, No. 12, Sept. 2, 1933, p. 795.² Ibid., vol. 101, No. 3, July 15, 1933, p. 227.³ Retail price under nonproprietary name.⁴ Ibid., vol. 98, No. 8, Feb. 20, 1932, pp. 658-660.⁵ Ibid., vol. 98, No. 4, Jan. 23, 1932, pp. 337, 338.⁶ Ibid., vol. 85, No. 1, July 4, 1925, p. 55.⁷ Ibid., vol. 92, No. 10, Mar. 9, 1929, p. 828.⁸ Ibid., Apr. 8, 1933, p. 1126.⁹ Ibid., vol. 92, No. 6, Feb. 9, 1929, pp. 492-495.¹⁰ Ibid., vol. 104, No. 4, Jan. 26, 1935, pp. 335, 336.¹¹ Ibid., vol. 109, No. 14, Oct. 2, 1937, p. 1142.¹² Ibid., vol. 102, No. 4, June 16, 1934, pp. 2041-2042.¹³ Ibid., vol. 110, No. 7, Apr. 23, 1938, p. 1385.¹⁴ Legislative Document of the State of Maine, No. 683, 1935, prepared by Dr. G. R. Coomb, director, Bureau of Health, p. 26.¹⁵ Ibid., p. 27.¹⁶ Ibid., p. 28.¹⁷ Ibid., p. 29.¹⁸ Ibid., p. 30.¹⁹ Ibid., p. 31.²⁰ Ibid., p. 32.²¹ Ibid., p. 33.²² Ibid., p. 34.²³ Ibid., p. 35.²⁴ Ibid., p. 36.²⁵ Ibid., p. 37.²⁶ Hearings before subcommittee on Interstate and Foreign Commerce, House of Representatives, H. R. 8906, H. R. 8905, H. R. 8941, and S. 5, July and August 1935, p. 371.²⁷ Ibid., p. 381.

In particular, the price of items sold under widely advertised brands often shows a tendency to be substantially more rigid than that of similar less advertised products. For example, chart IX compares the

CHART IX

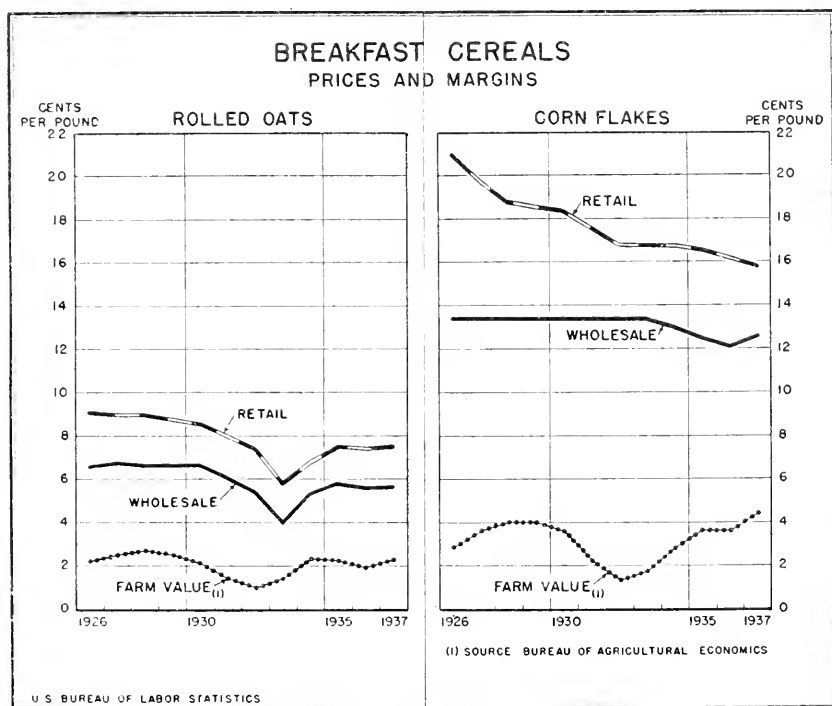


trend of retail prices for one widely advertised brand of men's business shirts with the average of a number of less-known brands meeting the same general specifications. The contrast is striking. Retail prices for the widely advertised product showed no change whatever be-

tween December 1929 and December 1932, whereas the average for all other comparable brands declined from \$1.91 to \$1.55.

These differences in price behavior characterize not only specific brands but also the general class of commodity to which the brands apply. For example, there is some reason for believing that brand preference plays a more significant role in the market for corn flakes than in the market for rolled oats. In the case of the latter, the product is somewhat more standardized and price comparisons between rival brands are perhaps simpler. Chart X compares the trend of wholesale prices and ingredient costs for these two commodities. The contrast is marked. The price of corn flakes is quite rigid and appar-

CHART X



ently independent of the fluctuations of its raw material costs. It did not decline at all between 1929 and 1933, despite the fact that the cost of its ingredients declined to less than one-third of its pre-depression level. During the same period, the wholesale price of rolled oats fell about 39 percent, paralleling the course followed by the price of its constituents.

A more general comparison may be made on the basis of the informal questionnaire, to which reference has been previously made. (See p. 78.) The 60 products for which data were obtained were ranked and divided into four groups or "quartiles", each group including approximately the same number of items, in order of increasing significance of brand preference. The average wholesale prices for each quartile

were then computed for the period between January 1926 and December 1938. These items for which brand preference was a relatively significant market factor showed far greater rigidity, as evidenced by their relatively smaller decline during the depression, as well as by a similar contrast in behavior during the 1937-38 recession. This comparison is shown in chart XI. In addition, the quartiles were also compared on the basis of the various criteria of flexibility described in appendix I. This comparison is shown in table 8. Again it is apparent that brands exert a distinct influence upon price flexibility, regardless of the manner in which it is computed. Those products whose markets are relatively unaffected by brand preferences showed greater frequency of change, greater decline during the depression, and greater recovery subsequently.

They also showed some tendency to respond more quickly to changing business trends, particularly during the recent downturn. Prices of products for which brand preference were unimportant declined after June 1937, while those for which they were most important did not start falling until 6 months later.

TABLE 8.—*Relation of price flexibility to importance of brand preference—Median flexibility according to specified criteria, for selected food products, grouped into quartiles on the basis of consumers' judgment as to brand significance*

[Median of each criterion per quartile]

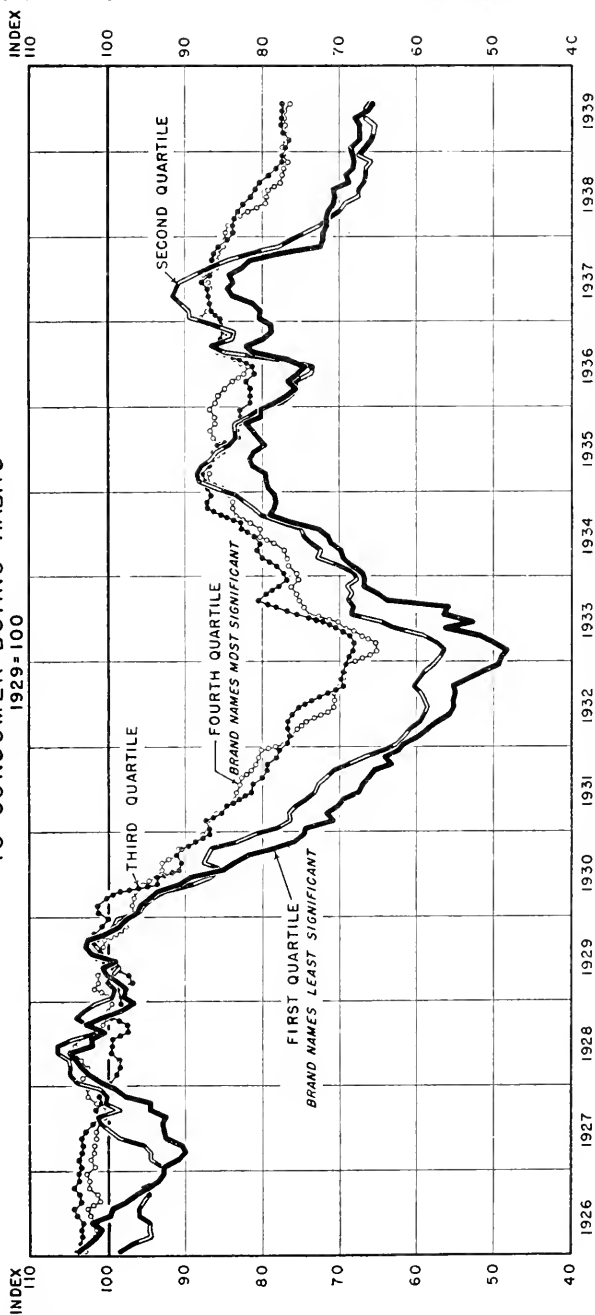
Criteria of flexibility	Quartiles—In order of increasing brand significance			
	1	2	3	4
Number of changes 1926 to April 1929	34	18	13	8
Percent decline, June 1929 to February 1933	55.0	45.8	34.3	37.9
Percent increase from depression low—1937 peak	93.9	74.4	43.7	44.6
Percent difference, average of 1929 peak and 1937 peak, less depression low index	57.9	45.5	39.5	38.2
Aggregate change less net change, 1926 to April 1929	94.7	93.1	40.4	15.7
Peak month of 1937 to 1938	6/37	6/37	9/37	1/38

It is probable that the effect of brands and trade-marks upon the pattern of competition has been somewhat affected by recent legislative trends. In 44 States, under the so-called fair-trade laws, the manufacturer of a trade-marked article can, by contract, stipulate the minimum price at which such an article may be resold by any dealer or distributor. Under the provisions of these laws, once such a contract has been signed between the owner of the trade-mark and any distributor within a State, its provisions automatically become binding upon all other distributors, even though they may not have assented to such a contract. The Federal Miller-Tydings Act exempts contracts of this kind between trade-mark owners in one State and distributors in another from the provisions of the antitrust laws.

Wide use has been made of the provisions of these laws in connection with the sale of drugs, toiletries, cosmetics, books, and liquors; in other fields such as radios and tobacco products, their use has been more sporadic. Few price-maintenance contracts have been issued for grocery products, except in one or two States, notably Ohio, where minimum prices are experimentally established for a very few staple products.

CHART XI

WHOLESALE PRICES OF SELECTED FOODS PRODUCTS CLASSIFIED INTO FOUR QUARTILES ACCORDING TO CONSUMER BUYING HABITS



NOTE: Data based upon sample study of consumer buying habits designed to determine relative weight given to brand names by consumers in purchasing different commodities. The products covered were ranked according to the importance of brand names in their respective markets, and then grouped into quartiles on the basis of these ranks. Unweighted averages of the Bureau of Labor Statistics wholesale prices for each quartile were then computed.

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The most obvious and immediate effect of this legislation, and the one primarily intended by its sponsors, has been the reduction or elimination of price competition between retailers in connection with the sale of nationally advertised merchandise. In those cases in which the minimum price is set at the advertised list price, there is no room for price competition as regards the products affected. For example, this is the situation which prevails with regard to some price-maintained cosmetics. Where the minimum price has been set at a level below list, some scope for price competition remains. In the case of branded drugs, for example, there is a tendency to fix the minimum price at list minus 20 percent, minus 1 cent (e. g., if the list price is \$1, the contract minimum is 79 cents; if list is 75 cents, contract minimum is 59 cents; if list is 50 cents, contract minimum is 39 cents, etc.). In practice, however, there may be some tendency, though certainly not a universal practice, for all retailers to charge the contract minimum.

Consequently, the focus of competition between retailers in the fields most affected (i. e., retail druggists, booksellers, and liquor dealers) has necessarily shifted. Those stores which emphasize price appeal have concentrated their efforts upon private brands which are not price maintained. One leading opponent of these laws has made its private brands available to any retailers who wish to compete on a price basis. The advertising of these retailers often emphasizes their private brands sold at reduced prices. Frequently, the advertising carries detailed technical comparisons designed to show that the product bearing the private brand is in every way equivalent to the nationally advertised, price-maintained article.

On the other hand, those retailers who favor the principle of price maintenance seized upon the elimination of price competition as an opportunity to feature such elements as service or convenience.³³

The effect of price-maintenance legislation is not confined to the pattern of competition between distributors. It is probable that it has also distinctly influenced manufacturers' sales strategy. In general, price-maintenance contracts provide a substantial margin for the wholesaler and retailer. Retail drug representatives have repeatedly insisted upon 33½ percent of selling price—equivalent to 50 percent of cost—as the minimum margin acceptable. The manufacturer who issues the contracts has therefore decided that it is more important for him to retain the goodwill of his distributors than to appeal to the public directly by selling his product as cheaply as possible.

The sales manager of a drug manufacturer summarizes this situation succinctly in an article in *Printers' Ink*.³⁴ He explains to a critic why manufacturers issue price-maintenance contracts:

If he has followed the history of the fair-trade movement he should know that the laws were forced through by independent retailers; that very few manufac-

³³ Fundamentally, this controversy is not so much one between individual retailers as between competing channels of distribution. The major proponents of price maintenance are members of the traditional orthodox channels of distribution; that is, the independent wholesaler and the relatively small independent retailer. Against them are arrayed some of the mass distributors, particularly large department stores and mail-order houses, who usually purchase directly from the manufacturer rather than indirectly through the wholesaler. However, there exists certain anomalies in this line-up. An important group of mass distributors, the large national drug chains, generally support price maintenance. The reputation of these chains was originally built upon price appeal, but at present it is sufficiently established to permit them to depend upon their prestige and to benefit from the larger profits which price maintenance offers. On the other hand, a number of smaller units, independents, or small chains, depend largely upon price appeal and have opposed the principle of price maintenance.

³⁴ *Printers' Ink*, August 26, 1937.

turers have taken an active part in obtaining passage. He should know, also, that in the drug and cosmetic fields many manufacturers are being compelled to operate under these laws against their wishes and better judgment. Pressure is being brought to bear through the retailers' associations and their fair-trade committees.

Manufacturers who do not file minimum prices are having their troubles with independent outlets in some States. Those manufacturers, such as ourselves, who have filed prices have had to set higher minimums than they desired in some instances. The committees are not permitted, supposedly, by law to dictate what the minimum prices shall be but they are doing just that by refusing to approve contracts containing prices which do not give the retailer what they consider to be a fair-profit margin. In most cases the committees are insisting on a mark-up of at least 20 percent and usually 33½ percent.

It is not surprising, therefore, that many drug manufacturers, in advertising to the trade, stress the high margins which they are offering the retailer on sales of their product. The following advertisements, culled at random from various drug trade periodicals, illustrate this trend. Many of them advertise mark-ups substantially higher than the 33½ percent minimum demanded by the trade:

Even at minimum prices—10-cent bottle profit when you sell Squibb's Milk of Magnesia 12 ounces at minimum 29 cents³⁵

Dr. West's Miracle Tuft Toothbrush, retail price 35 cents. Weeco's policy of price and profit protection by every legal means to insure full 20 cents for you on every sale.³⁶

(Johnson and Johnson)—Fair trade minimums protect your interest and give you at least 42 percent average profit.³⁷

J. & J. Red Cross Adhesive Plaster: Assortment cost \$25.84—your profit 48.3 percent—sell at \$50.04. At fair trade minimums you meet competition and make a profit of 48 percent on the selling price.³⁸

Your profits up from that big 45 percent to 54 percent on Co-Ets 48's.³⁹

Solarex—Dark lens glasses: A high profit on all Solarex dark lens sun glasses, assured by strict adherence to the Miller-Tydings fair-trade laws. You pay \$10.80. You sell for \$18.36. Your profit⁴⁰ \$7.56.

In addition to offering you a diversified line of nationally known, popularly priced products of high quality, we prescribed full advertised prices to insure you a satisfactory profit. You can buy our products from your jobber, or, if you prefer, you can take advantage of our liberal credit terms, which range from 3 to 6 months on direct purchases in quantities as small as \$9.60, yielding an average profit of 44 percent. Our full advertised prices are our minimum retail prices.⁴¹

\$6.60—Cost Major Donald Duck Deal, 90 assorted packages, 1 large \$4 Major Donald Duck, 1 Disney Counter Display, sells for \$13.⁴²

Fifty percent average profit on all McKesson sales.⁴³

³⁵ Drug Topics, May 16, 1938, p. 22.

³⁶ Ibid., December 12, 1938, p. 5.

³⁷ Ibid., July 18, 1939, p. 7.

³⁸ Ibid., May 30, 1938, p. 14.

³⁹ Ibid., April 3, 1939, p. 6.

⁴⁰ Ibid., March 6, 1939, pp. 8, 9.

⁴¹ Ibid., June 20, 1938, p. 24.

⁴² Ibid., March 6, 1939, p. 53.

⁴³ Ibid., August 29, 1938, p. 23.

Since price competition between rival manufacturers in such fields as drugs and cosmetics is largely ineffective as regards branded goods, price maintenance may have induced some reorientation of tactics by concentrating further attention upon the distributor and less upon the consumer.

The effects of price maintenance upon price behavior have been the subject of much controversy. There have been no adequate impartial surveys conducted. It seems probable, however, that prices in those stores which used to feature price appeal have risen, and that perhaps there has been some minor decline in those outlets which competed on bases other than price. For example, the July 1938 issue of *Dun's Review* compares prices for 50 fast moving drug and cosmetic items in the State of New York before and after the issuance of price maintenance contracts. These figures show that for those drug stores which featured price appeal, there was an average increase of 29 percent. The increase of one item was as high as 67 percent. In contrast, neighborhood drug stores which did not compete on a price basis showed an increase of only 2 percent in New York City and decreases varying from 4 percent to 10 percent in smaller cities. However, the entire group covered included only 40 stores. Moreover, the data for the first group of stores were obtained through the cooperation of a trade association which has been very active in opposing the legislation, while those for the second group were obtained through the aid of an association which had been its vigorous proponent. Figures of this kind are particularly hard to verify, because there are few, if any, drug stores which maintain records of the prices which they charged in the past. Finally, it should be noted that the general trend of wholesale and retail prices during the period covered was downward. Consequently, the reliability of such surveys is somewhat questionable, though with very broad reservations the trend displayed may have some validity.

It seems likely, too, that price maintenance has increased price rigidity in the wholesale as well as the retail markets for the commodities affected. When a manufacturer has issued contracts in many states stipulating minimum resale prices, any change in price involves a somewhat complex and expensive mechanical process. It has already been shown that there is a tendency for prices of branded goods to remain relatively rigid. Price maintenance, by making it more difficult to initiate price changes, has perhaps augmented the tendency.

It is apparent, then, that brands, particularly for consumer's goods, must be considered a major aspect of nonprice competition. The use of brands and trade-marks materially lessens the intensity of price competition for the products affected. This may result in a level of prices somewhat higher than would otherwise be the case. It almost certainly impairs price flexibility. Both of these trends may be reinforced by price maintenance legislation, though adequate data relating to its effects are unfortunately lacking.

OTHER FORMS OF NONPRICE COMPETITION—ESCAPE DEVICES

It has been suggested earlier (pp. 55-56) that the altering focus of competition reflects to a considerable extent the attitude of businessmen based upon considerations of expediency. To many business

firms the concentration of effort upon nonprice factors represents a distinct advantage, particularly as regards profit margins per unit of sales.

These considerations of expediency do not, however, apply to all kinds of business firms equally. If price competition is absent, those firms which are best equipped to compete on the basis of quality, service, or prestige, are most likely to retain or expand their shares of the market. Conversely, those companies whose reputations have yet to be established encounter distinct difficulty in marketing their wares if they are unable to offer some price inducement.

In many industries this situation is more or less implicitly recognized by custom. The larger⁴⁴ and better known companies often permit their smaller competitors to undersell them by a slight margin, thereby permitting them to compensate in price for their disadvantage in nonprice competition. It may be considered that such a practice establishes a more or less direct price equivalent for certain intangible nonprice elements.

Naturally, arrangements of this sort do not always survive periods of stress. During an acute buyers' market, for example, price often becomes an increasingly important competitive weapon and is used freely even by those whose normal tactics and inclinations avoid the use of price competition. During such periods, the small firm's edge often becomes reduced or obliterated. Efforts on the part of small firms to retain their edge sometimes culminate in severe price wars. Differences of this kind in the competitive position of different firms become particularly apparent whenever efforts are made to regulate market practices. Under National Recovery Administration, for example, these conflicts of interest become evident in many industries.

Price regulation constituted an important aspect of many of the codes of fair competition. Regulations which tended to equalize prices and to eliminate price competition necessarily placed certain firms at a marked disadvantage. Thus, according to a report of the Division of Industrial Economics summarizing the National Recovery Administration experience:

In whatever way uniform prices were achieved, their intent and effect were usually to impair the competitive strength of those concerns that had formerly depended upon price appeal. In the retail solid fuel industry, for example, distribution by truck had expanded markedly during the depression. Small distributors maintained no storage yards, but bought truckloads from the mine or the freight terminal and delivered directly to the consumer. Since their service was often irregular and their prestige not well established, they could obtain business only by price concessions. The effect of the industry's minimum prices was to deprive them of their selling argument and also to weaken the very small coal yards.

* * * * *

In the Cleaning and Dyeing Trade the cash-and-carry cleaners contended that they could not keep their business unless they were permitted to sell below the prices of those cleaners who receive and deliver the garment at the customer's residence. Their refusal to abide by the uniform minimum prices established under the code was an important factor in the breakdown of the price structure. In the Wholesale Confectionery Trade a cash-and-carry wholesaler complained to a member of his local code authority that he must either allow a larger discount than his competitor who delivered merchandise and extended credit or else go out of business. As he later described the conversation: "The answer was this,

⁴⁴ In manufacturing industries the advantage of prestige is usually, though not always, on the side of the large, well-established firms. In the retail and wholesale trades, however, it is often the smaller independent concern which prefers to compete on grounds other than price.

'Mr. Lieberman, you have been a cash-and-carry man. From today on you will become a service man.' I said, 'You are a code authority lawyer today; what would happen if someone wanted you to become a criminal lawyer? Would you like that?'⁴⁵

In other industries, prestige, rather than service, was a factor. Thus in the business furniture industry there was a serious conflict between the large manufacturers who depended upon their established reputation and smaller ones who could only operate on the basis of price appeal. Any program designed to eliminate price competition seemed congenial to the interests of the larger producers. The conflict in point of view between those who favored price competition and those who wished to eliminate it entirely in favor of nonprice competition is clearly revealed in the following extract from a National Recovery Administration hearing. A speaker representing a very large producer stated:

One of the serious difficulties in our business has been that the large manufacturers by means of their designers, and advertising and other promotional efforts have created a demand for these products—you will recall that there is, after all, no particular demand for these products unless it is created—whereas the small dealers undersell, and undercut the efforts of these large manufacturers, and the results in the past have been most disastrous.

* * * * *

The manufacturers who have developed these goods and the dealers who have sold it (*sic*) and created the demand must not have their business taken away from them—or all the profits taken away, which amounts to the same thing, by small manufacturers or small dealers from over the other side of the track, who are willing to sell at any price and thus spoil what was once a profitable business.

Our code provides that there shall be no discrimination against the little fellow but nowhere, in any code, have I seen any reference to the small operator being entitled to protection or an "edge" at the expense of the larger group. The small operator is entitled to all the business he can get on the right terms and on equal terms with the rest of the industry.

* * * * *

The representative of the Consumers' Advisory Board replied:

Mr. BOFFEY. You made the statement that the small operator should not be allowed to take advantage of the big operator.

Mr. KEELING. I feel that very keenly.

Mr. BOFFEY. As between the small operator with limited sales promotion, and the large manufacturer who is able to use advertising and create consumer demand, who is going to get the order from the consumer on an equal basis?

Mr. KEELING. I would like to answer that in a rather roundabout way. Bear in mind this, that all the large manufacturers were small at one time, and collectively, and in some cases individually, they have spent millions of dollars in developing this business, and any small manufacturer has the right to come in tomorrow and open up a little shop in a back alley some place, but there is no obligation on my part to hold an umbrella over him and protect him until he is a responsible competitor. He is entitled to all the business he can get on even terms. When my firm started we asked no odds of anyone, and there are many other manufacturers who did the same thing. They started in business and went out on even competition and built their business up, and there are many examples of manufacturers who have started within the last 10 years and have built up a substantial business and asked no quarter of anyone. There are many manufacturers doing business in a loft, or in a back alley. They claim a preference and a protection they are not entitled to. The small dealer is not entitled to any protection. He is entitled to all the business he can get on the right terms.

Mr. RAUCH. You also referred to there being no reason why the large producer should hold an umbrella over the small producer. You don't mean to infer by that if the small producer does not incur a large advertising expense, for example, he should be compelled to sell at a price which would include that expense?

⁴⁵ Minimum Price Control—Staff Studies—Division of Industrial Economics, ch. II, pp. 53, 57, 58.

Mr. KEELING. I didn't mean that, but I mean this: If I have a file of a certain grade as the man across the street who is just going into the business makes, he has no right to undermine me by underselling me. I like him personally and all that sort of stuff, but I am not going to pat him on the shoulder and give him a couple of dollars every time he sells a file. When my company started we asked no quarter; we went out and got the business, so I see no reason for any edge or protection from anyone in any line of activity. Let them go out and meet competitive conditions as they find them. That is the way we feel about it.

Mr. RAUCH. You maintain, do you not, that the small individual has the right to file any price he wants, and you have the right to meet it?

Mr. KEELING. That is right. Any manufacturer has the right to file any price he chooses at any time, but when once filed, he must sell at that price. He can change it at any time, but he must file his change, and anybody has got the right to go out and meet him.⁴⁶

A somewhat similar situation occurred in the tire-manufacturing industry, where again it seems that smaller manufacturers could compete with the larger only on the basis of price. The consequences of the code provision designed to limit the freedom of price competition were expressed by a small producer in the following words:

We don't want to sell below cost. We don't propose to sell below cost, but you notice what they add to it. Nobody must sell below cost unless to meet competition.

Well, up here is a big manufacturer. Everybody knows he has to sell above us if he can make money. He can do it and has consumer acceptance that carries him on. He would starve if he sold at our price. There is no question about it. He does not have to. He keeps on advertising. Here is our cost. He does not have to sell at his cost when he meets our competition, so he can come down and meet us and we have not any right under the formula to fall below; in other words, as I have heretofore said, we are chained to a post, and he comes and gets us and sells against us as long as he wants to because of that provision. Don't you see where it all leads? ⁴⁷

Illustrations of this kind could be multiplied indefinitely. Enough has been said, however, to show that a shift from price competition to nonprice competition may not benefit all the firms in an industry equally, even if the longer term aspects of the issue be neglected. In general, established concerns are often content to retain their positions in the industry, and to avoid price competition, while growing companies must use aggressive tactics to expand their shares of the market.

One procedure for equalizing the situation has already been suggested; that is, a state of affairs in which firms with superior prestige permit those whose prestige is inferior to charge a somewhat lower price. Where this alternative is unavailable, either because members of the industry do not accept the custom or because of some form of price regulation, other devices have been attempted. Under National Recovery Administration, for example, an amazing degree of ingenuity was displayed in devising new forms of competition to take the place of those prohibited by the codes. Quoting again from the report of the Division of Industrial Economics:

Wherever minimum-price systems cause peculiar difficulties for one part of an industry, there was a direct incentive to evade or destroy the minimum prices. Minimum-price provisions were consequently difficult to enforce.

Opportunities for evasion were manifold. Since the code provisions had been hastily written, legal ways of selling below the minimum prices could often be discovered. Even the most carefully drawn code provision was seldom an adequate check upon a determined price cutter. Price concessions could be made by

⁴⁶ Ibid., pp. 54, 55, 56.

⁴⁷ Ibid., p. 56.

greater liberality in the quality or quantity of the product or in any of the accessory services or terms of sale; and to regulate every detail of each transaction was impossible.

In the sale of tires prices could be cut by extending the duration of guaranties of performance. Price concessions in the retail sale of automobiles consisted largely of higher trade-in allowances upon used cars. In the lumber and bituminous coal industries, price cutters delivered better grades than had been ordered and paid for. In the bituminous coal industry some producers offered guarantees which their customers knew were excessive and contracted to forfeit a part of the price if the coal was below the guaranteed standard. In many industries premiums or free deals were used to reduce the net price. Some producers attracted trade by offering lavish entertainment to buyers. Others offered unusually liberal cash discounts and credit terms. Long-term contracts whose date was alleged to be prior to the minimum price system served as excuses for sales at low prices to favored customers.

* * * * *

Successive efforts to plug loopholes in minimum-price provisions made the provisions increasingly complicated. Detailed regulation of terms of sale decreased the flexibility of business transactions, caused inconvenience to many concerns which were not using the prohibited practices to evade the code, and multiplied the points at which governmental supervisions and enforcement were required. Petty regulations became so complicated that in some instances they were a nuisance both to the industry and to the administration. An example of the detailed character thus given to Federal law is the stipulation in the Retail Tobacco Code that "the retailer may give not more than 1 pad of matches for each unit sold or 5 pads per box of 25 cigars, or 10 pads per box of 50 cigars sold."⁴⁸

Perhaps the best commentary on the variety of forms which competition can assume and the variety of ways in which price quotations can be indirectly modified is the following list of the types of regulation which were attempted under National Recovery Administration in the effort to regulate all forms of competitive tactics. This summary of code provisions is in a sense an index to all the varieties of nonprice competition with which business men in various industries were reasonably familiar, though even these did not include all the possibilities.

TYPES OF CONCESSIONS TO INFLUENCE SALES AS DEALT WITH BY CODES

1. Concessions primarily related to time of buyer's payment:
 - Discounts.
 - "Terms" and "conditions" of sale or payment.
 - Credit practices.
 - Credit terms.
 - Cash discounts.
 - Periods of free credit.
 - Interest rate beyond free-credit period.
 - Datings.
 - Seasonal datings.
 - Installment sales.
 - Deferred payment.
 - Anticipation of bills.
 - Sales to delinquent accounts.
 - Sales not contingent upon buyer's credit standing.
 - Payment due when money received from other sources.
 - Retained percentages.
2. Concessions primarily related to risks of buyer:
 - Guarantees.
 - Price guarantees.
 - Contracts for deferred delivery not subject to price change.
 - Price offer not subject to change.
 - Advance notification of price change.
 - Delaying acceptance of order.

⁴⁸ *Ibid.*, pp. 70, 72.

Options.

Agreements indefinite as to time or quantity.

Offers without time limit.

Offers not expiring within specified period of time.

Offers without withdrawal provisions.

Guaranties against defective goods.

Product guarantees.

Product guarantees against other than defective merchandise.

Uniform product guarantees specified in code.

Guarantees in excess of manufacturers' warranty (distributing and fabricating codes).

Maintenance guarantees.

Adjusting incorrect shipments.

Accepting return of merchandise.

Accepting return of obsolete, discontinued or "unsalable" merchandise.

Exchanging merchandise.

Accepting return of other than defective merchandise.

Repurchase agreements.

"Money-back" agreements.

Sales subject to trial.

Sales on approval.

Shipments without order.

Sales on consignment or memorandum.

Storing goods with customer.

Display for direct sale in customer's store.

Renting or leasing industry products.

Resale guarantees.

Agreeing that payment be governed by sales of secondary product.

Accepting orders for specific jobs before customer secures award.

Guaranteeing accounts due customers.

"Compensation of customer for business losses."

Unilateral agreements (buyer not bound).

Contracts containing penalty clauses.

Contracts containing liquidated damages clauses.

Contracts not subject to adjustment necessitated by noncontrollable factors.

Assuming liability for nonperformance caused by noncontrollable factors.

Assuming liability for damage to buyer's drawings or equipment caused by noncontrollable factors.

Assuming liability for errors in plans or specifications furnished or approved by buyer.

Assuming liability for consequential damages.

Assuming liability for patent infringement.

Failure to give advance notice of discontinued lines.

3. Concessions primarily related to supplying additional goods:

Any gratuities.

Free deals

Premiums.

Sales of other or additional goods at reduced prices.

Combination sales.

Combination offers.

Coupons.

Samples.

Scrip books.

Prices.

Sales promotion awards.

Containers.

Special containers.

Labels.

Special labels.

Special equipment.

Accessories.

Certain advertising material.

Display materials.

Printed matter (other than advertising material).

4. Concessions rendered buyer through use of seller's employees or property:
 - Any unusual service.
 - Providing sales help.
 - Demonstrating.
 - Estimating.
 - Furnishing drawings.
 - Furnishing plans and specifications.
 - Furnishing surveys and formulas.
 - Installation and erection.
 - Inspections.
 - Furnishing unusual processing services specified in codes.
 - Stampings or markings.
 - Repair and maintenance.
 - Reconditioning.
 - Engineering services.
 - Handling.
 - Crating or packing.
 - Repacking.
 - Delivery service by seller's trucks.
 - Warehousing and storage.
 - Lending of equipment.
 - Permitting retention of trade-in equipment.
5. Concessions rendered buyer through financial assistance or favors:
 - Favors.
 - Entertainment.
 - Patronizing publications in which buyer is interested.
 - Participating in group showing.
 - Gifts.
 - Gifts to organizations (in which buyer is interested).
 - Paying buyer's personal expenses.
 - Paying permit or inspection fees of buyer.
 - Paying customer's insurance.
 - Paying customer's advertising expenses for products other than member's
 - Assuming reversed telephone or telegraph charges.
 - Assisting customer to obtain used products for trade-ins.
 - Assisting customer to find purchaser for used products.
 - Subsidizing or financing buyer.
 - Employing customers, employees, relatives, associates.
 - Purchase of buyer's capital stock.
 - Financing payments due customer.
6. Concessions related to manner and/or time of shipment:
 - Split shipments.
 - Shipments smaller than specified minimum.
 - Tolerance in time of shipment
 - Deferred delivery.
7. Concessions through payment or diversion of commissions or fees to customer:
 - Payment of commissions or fees by members to buyers.
 - Payment of commissions or fees by members to other than bona fide or controlled sales representatives.
 - Payment of commissions or fees by members to purchasing agents compensated by buyers.
 - Payment of commissions or fees by agents of members to buyers.
 - Splitting of commissions or fees by agents of members with agents of buyers without buyer's knowledge.
 - Splitting of commissions or fees by members or their agents with buyers or their agents.
 - Payment of brokerage to other than bona fide brokers.
8. Concessions through allowances or payments for value rendered by buyer:
 - Allowances.
 - Trade-in allowances.
 - Advertising allowances.
 - Catalogue allowances.
 - Distribution service allowances.
 - Container allowances.
 - Installation allowances.
 - Allowance for further processing.

Maintenance or repair allowance.
 Rental allowances for space hired.
 Allowance on supplies furnished by purchaser for production of product ordered.
 Cartage allowances when buyer receives goods at factory.
 Allowance for special service.
 Label allowances.
 Purchasing from buyer.
 Renting from buyer.

9. Concessions through acceptance of competitor's materials from buyers:

Exchange of own for competitor's products.
 Purchase of competitor's products from customer.

10. Concessions through sale of substandard or obsolete goods:

Sale of seconds.
 Sale of used goods.
 Sale of damaged goods.
 Sale of rebuilt or overhauled goods.
 Sale of demonstrators.
 Sale of obsolete goods.
 Sale of discontinued lines.
 Willful manufacture of substandard products.
 Sale of returns.
 Sale of scrap.
 Sale of chaff.
 Sale of culled goods.
 Sale of surplus stock.

11. Concessions granted during performance contrary to provisions of agreement:

Rebates.
 Departure from credit terms of contract.
 Settlement of old accounts at less than full value.
 Permitting improper deductions when buyer remits.
 Permitting buyer's cancelation or repudiation.
 Substitution of higher quality or greater quantity of goods.
 Substitution of new contract at lower price.
 Receipting bills before payment.
 Extending or exceeding contract.
 Collateral agreement not to enforce part of contract.
 Departure from delivery date of contract.
 Retroactive settlement or adjustments.

12. Acceptance of forms of payment in which concessions may be concealed:

Accepting securities.
 Accepting buyer's capital stock.
 Accepting goods from buyer.
 Accepting real or personal property.
 Accepting negotiable instruments.
 Accepting other than lawful money.
 Accepting credit transferred from one buyer to another.
 Selling for customer account and accepting proceeds for credit.
 Accepting form of payment other than specified in code.
 Accepting rental payments as part payment on purchases.
 Accepting deposit made to another manufacturer.
 Assignments (of receivables, etc.).

13. Types of agreements, offers, invoicing, etc., by means of which concessions may be concealed:

Oral agreements.
 Oral offers.
 Oral appraisals.
 Oral orders.
 False billing.
 False orders.
 False receipts.
 False agreements.
 False offers.
 Delayed billing.
 Misdated invoices.
 Misdated contracts.

- Misdated orders.
- Misdated offers.
- Misdated receipts.
- Invoices omitting terms of sale.
- Invoices omitting date of shipment.
- Invoices omitting specifications.
- Invoices omitting other specified detail.
- Agreements omitting terms of sale.
- Agreements omitting date of shipment.
- Agreements omitting specifications.
- Agreements omitting other specified detail.
- Offers omitting terms of sale.
- Offers omitting date of shipment.
- Offers omitting specifications.
- Offers omitting other specified detail.
- Orders omitting terms of sale.
- Orders omitting date of shipment.
- Orders omitting specifications.
- Orders omitting other specified detail.
- Split billing.
- Lump sum offers.
- Unitemized billing.
- Orders not subject to member's acceptance.
- Auction sales.

14. Types of agreements, offers, invoicing, etc., primarily designed to prevent the concealing of concessions:
- Uniform contract form.
 - Uniform order form.
 - Uniform bid or quotation form.
 - Standard invoice form.
 - Standard leasing form.
 - Form of contract.

It is apparent then that trade-practice regulation, such as that practiced under the National Recovery Administration, often serves to divert the focus of competition. However, it may not prevent or stifle it; emphasis shifts from those aspects of the transaction which are regulated to others which are free of control.

The National Recovery Administration experience was used to illustrate this point because it covered so wide a sector of industry and because of the wealth of data available as to its effects. However, the phenomena observed are by no means unique to that period. Similar shifts in competitive emphasis are constantly occurring, not only because of the impact of Government regulation but also as a result of all the constantly changing pressure to which the businessman is subjected during the ordinary conduct of his affairs.

Thus, it is often inexpedient for the individual firm to change its nominal price quotations to secure large individual orders. To do so may arouse the resentment both of competing sellers and of buyers not equally favored; since the Robinson-Patman Act was passed it may even be illegal to do so. Consequently, many devices similar to those considered in connection with National Recovery Administration are utilized to grant indirect concessions in unregulated markets, as well as in those subject to some form of Government control.

Frequently these concessions amount so directly to modifications of the nominal or quoted price that they are not, properly speaking, aspects of nonprice competition. However, since they are not usually reflected in published price statistics, they must be accorded due weight in any interpretation of the movements of price indexes.

An excellent illustration is afforded by the market for sulfuric acid. The published price quotation for this commodity is remarkably rigid. It showed no change at all between November 1927 and May 1937. In all probability, moreover, this quotation accurately reflects what the small buyer was required to pay during this period.

However, there is evidence that a very material share of the total sulfuric acid production is sold on the basis of contracts covering a period of a year or longer. The prices stipulated in these contracts seem to be subject to material modification by bargaining. They are probably substantially lower than the published quotation at all times, and also seem to show appreciably greater flexibility.

Thus, the following table contrasts the nominal quotations as reported by the Bureau of Labor Statistics with the actual prices paid by a large buyer:

TABLE 9.—*Comparison of quoted prices for sulfuric acid with prices actually paid by a large buyer*

Year	Average quoted price per ton (converted to 100-percent basis) ¹	Price paid by large buyer per ton (100-percent basis) ²	Year	Average quoted price per ton (converted to 100-percent basis) ¹	Price paid by large buyer per ton (100-percent basis) ²
1926.....	\$15. 67	\$15. 35	1932.....	\$16. 63	\$12. 38
1927.....	16. 20	15. 94	1933.....	16. 63	12. 25
1928.....	16. 63	15. 73	1934.....	16. 63	14. 96
1929.....	16. 63	12. 85	1935.....	16. 63	14. 68
1930.....	16. 63	12. 18	1936.....	16. 63	-----
1931.....	16. 63	12. 37	1937.....	17. 21	13. 52

¹ The Bureau of Labor Statistics quotation was for 66° B acid. It was converted to a 100-percent basis by dividing by 0.932, which is the acid content of 66° acid. This basis of conversion is approximate, but it is adequate for the purpose of comparison.

² All these prices, with the exception of the year 1934, were on the basis of contracts for the period of 1 year or longer. The 1934 price represented noncontract purchases.

Sometimes wide concessions below the quoted price level are made available to buyers generally, rather than to selected customers. Reported and published prices remain stable, while the level at which business is being transacted fluctuates sharply. The National Resources Committee cites the following examples of this technique in a report just published.⁴⁹

(1) *The fertilizer industry.*—Some clue to the extent to which rebates and concessions affect nominal fertilizer prices may be obtained from a report of the Federal Trade Commission.⁵⁰ According to this report, there was widespread selling of fertilizer at prices far below list during the years 1921 and 1922. The Bureau of Labor Statistics index showed no change in price between January and December 1921. It showed a substantial cut between December 1921 and January 1922, and perfectly stable price quotations through 1922. According to the Trade Commission, however, "in 1921 and 1922 price lists were published as usual, but were so high that the companies were unable to maintain such prices for any length of time." The Commission reproduced many letters taken from the files of fertilizer manufacturers which reveal the extent to which rebating was practiced. During this period, for example, Swift & Co. were selling to dealers at discounts of 33.3 percent plus 5 percent off schedule, and, in addition, granting a direct rebate of \$2 per ton. The American Chemical Co. instructed its North Carolina sales managers to go as far as 33.3 percent below list wherever necessary

⁴⁹ The Structure of the American Economy, National Resources Committee, pt. I, June 1930, p. 178.

⁵⁰ Fertilizer Industry. Letter from the Acting Chairman of the Federal Trade Commission transmitting in response to a Senate resolution of June 17, 1922, a report on certain phases of the fertilizer industry. S. Doc. 347, 67th Cong., 4th sess.

to meet competition. On April 10, 1922, * * * a district manager of the American Agricultural Chemical Co. wrote to its vice president: "I think every concern operating out of Atlanta, with no exception, is making almost any price it sees fit in order to get some business. * * * All managers and division managers practically admit that there is no regular price."

Although similar documentary evidence is not available for periods subsequent to 1921 and 1922, persons close to the trade state that similar practices have recurred under similar conditions.

(2) *Salt industry.*—A parallel situation occurred in the salt industry during the latter part of 1935. * * * Price quotations show no decline from March to September 1935. Yet, according to a National Recovery Administration study, a price war started early in 1935 and discounts of as much as 30 percent were being granted by August 1935. According to this report—

"Particularly during time of depression, in efforts to bolster declining sales volume, many members of the industry offered secret prices, discounts, rebates, and other concessions * * *.

"In the latter months of the code period, the practice of granting secret rebates and other secret concessions from filed prices began to develop in the industry. Filed prices were maintained at uniform levels within the various marketing areas, but actual price uniformity was disappearing. The difficulty of discovering and proving secret price concessions, plus rather apathetic support from the National Recovery Administration along compliance lines, contributed to the growth of secret pricing.

"Following May 27, 1935, deviations from published prices became more and more troublesome. By August, the secret prices evidently became sufficiently serious to warrant retaliation by the price leaders in the industry. Since that time, there has developed one of the worst price wars experienced in recent years by this industry. Published prices remain practically the same as they were during the code period, but discounts and rebates ranging from 20 to 30 percent are being granted to various types of buyers."

Despite the existence of this price war, the nominal price quotations * * * showed no change at all until October 1935. The October quotations were 26 cents, or 10 percent, below the September prices; but even this reduction in the list price did not approximate the extent of the discounts which were being granted.

* * * * *

Frequently, concessions are granted more indirectly. For example, advertising allowances are a common form of granting special inducements to purchasers. Allowances may be granted for window display, preferred location of goods, use of special selling equipment, advertising in local newspapers, distribution of samples, radio advertising, the furnishing of store space for demonstrations, and the like. Supposedly the allowance is proportioned to the value of the advertising services so rendered to the manufacturer. Frequently, however, particularly prior to the passage of the Robinson-Patman Act, the amount of the allowance was governed largely by competitive conditions surrounding the particular transaction. In such cases the advertising services to be rendered may have been merely the excuse for the allowance; often no effort was made to determine whether they were actually rendered in accordance with the agreement. Evidence as to the extent of such allowance was obtained by Congress during an investigation of the American Retail Federation.⁵¹

Nor are practices of this kind confined to the wholesale market. Retailers often find indirect ways of granting concessions to customers when overt price cuts either seem impolitic or are restrained by law. For example, a retail liquor dealer in Washington, D. C., carefully marks all his merchandise at the accepted price on his shelves but allows discounts of more than 20 percent to any customer who asks for it. In a southern city various retail druggists who depended upon

⁵¹ Hearings before the House Committee on Investigation of the American Retail Federation, 70th Cong., 1st sess., vol. 1, pp. 465-470 and vol. 4, pp. 215-344.

price appeal, developed a novel scheme for evading minimum prices established by contract under the provisions of the Fair Trade State Act. They sold price-maintained drugs and cosmetics under the installment plan, requiring a down payment of a specified sum somewhat under the minimum price, with the balance to be paid subsequently. It is possible that no serious effort was made to collect this balance.

Basically the issues raised by this section may be summarized in the following manner. In any industry or trade, unless an effective method for the outright allocation of business exists, there will be a degree of rivalry among competitors, each seeking to expand its own share of the market. In most lines the competitive strategy best suited to the position of the rival firms will show some variation between them. Usually, some firms, such as the largest and best known, can compete more effectively on the basis of their relative prestige. Assuming all other elements of the transaction to be identical, a constant or increasing share of the volume would naturally flow to them.

Consequently, those firms whose prestige is inferior usually find it necessary to offer some compensating inducement. The most obvious form in which such an inducement can be offered is as an outright price reduction. Frequently, however, the possibility of using price as a competitive argument is limited by such factors as the fear of reprisal, the threat of coercion, or the operation of law. In that case, competition is usually diverted into other channels.

In a few industries, of course, all members are apparently content merely to maintain their respective positions. Whether such decisions be voluntary or reflect some form of duress, the result is equivalent to outright monopoly. In most industries, however, there are at least some firms which are dissatisfied with their shares of the market. Whenever any particular form of competition becomes either illegal, unprofitable, or for any reason inexpedient, other outlets for the pressure of business rivalry are devised to take its place by these aggressive concerns. The range of such devices is limited only by the ingenuity of businessmen.

This protean quality of competition must be reckoned with in any efforts to regulate or control specific competitive practices. Whenever any one avenue of competition is closed or made difficult, whether by business itself, or by Government through such legislation as the fair trade laws, a diversion of business tactics is the probable result. Unfortunately, as indicated in the following section, not all the aspects which competition assumes can be considered equally conducive to the efficient functioning of the economy.

CONCLUSIONS

In summarizing this illustrative discussion of phases of nonprice competition, it should be borne in mind that the basic criteria upon which public policy in regard to business practices must be based are their effect upon the standard of living of the people, and, more broadly, upon the manner and efficiency with which the Nation's economic resources are utilized. Uneconomical or wasteful practices which lead to unduly high prices are not in the public interest; ob-

scuring the true value of products is not in the public interest; undue degradation of quality, even though it may bring lower prices, is not in the public interest. All of these practices prevent or interfere with the best use of the consumer's dollar and limit his standard of living. It is clear from the discussion presented here that the issues involved in regulation of business practices and, in particular, of the trend away from price competition, are exceedingly complex. This report has not attempted to present all the evidence required for categorical judgment on the value of these various forms of nonprice competition; but rather to suggest where the weight of evidence lies, and to point to possible types of public control.

Attention may first be directed to the escape devices discussed in the immediately preceding section. The evidence seems to show that in many industries there has been a constant redirection of competitive effort. As one or another accepted form of competition becomes illegal or inexpedient, the ingenuity of business firms is exercised in exploring new channels to replace the old ones. The economic efficiency of this process seems highly dubious. Its general trend seems to be the substitution of increasingly indirect ways of granting concessions as more forthright and direct ones are successively abandoned. Indirection is not generally an economical or efficient process. Moreover, it complicates the problems of choice facing the buyer in comparing the offers of rival sellers.

It has been shown that the trend frequently reflects the efforts of established firms to maintain their position in an industry by making it difficult for new entrants to compete on a price basis, or for small and comparatively unknown companies to expand by featuring factors other than prestige in their sales strategy. To the extent to which such efforts are successful, they impair the desirable flexibility of business structure. Even when they fail in their ultimate purpose, they often result in diverting competitive effort from direct and efficient channels into indirect and less efficient channels. Public policy may therefore be properly concerned with keeping all legitimate avenues of competition equally open, and with discouraging efforts to bar any one of them.

A sharply contrasting situation is presented by such conventional practices as "price lining." Price lines do not involve any constant, wasteful redirection of competitive effort. Even in the absence of price lines, such factors as quality and style would necessarily play major roles in the apparel market. In fact, the existence of price lines, instead of complicating the problems of choice facing the buyer, as do most of the escape devices described, actually simplifies them somewhat. The number of variables between rival offers is reduced. The buyer can accept price as a constant and concentrate his attention upon comparing other elements such as quality or style. To the seller some economy is achieved in the problems of business planning.

On the other hand, there seems little doubt that price lining incurs a penalty, particularly when the lines become unduly rigid. The adjustments necessary from time to time to keep a product within established lines may be wasteful or undesirable. If manufacturing costs rise, for example, quality factors may be seriously skimped. When costs fall, on the other hand, adjustment may take the form of adding unnecessary frills which do not add proportionately either to

appearance or usefulness. Such developments seem inevitable when production is geared to an unchanging price pattern. Considerations of this sort apply not only to such goods as apparel but with equal or greater force to other price-lined articles such as household equipment (e. g., radios, washing machines, etc.).

Moreover, rigid price lining may detract from the degree of price flexibility which is economically desirable. This is particularly true where the steps between successive prices are large and where the buyer cannot readily adjust by shifting from one price line to another. For example, during a period of declining purchasing power, the consumer may be obtaining a somewhat superior article for the same price; but this is not equivalent in its economic effect to a direct price reduction for an article of unchanged quality.

It cannot be gainsaid that there is a certain inevitability about the development of conventional patterns of business behavior. Price lines and similar customs largely reflect the adjustment of buyers and sellers to each others' preferences and convenience. Occasionally, the rigid maintenance of price lines may be associated with some form of concerted or collusive action, although, in the main, they represent the gradual growth of custom in highly competitive industries, where collusion would be next to impossible.

Consequently, if certain aspects of conventional business practice were found undesirable from the point of view of public policy, any program of action would have to take lines quite different from those traditionally followed by government. A mere attack upon collusive practices would accomplish little or nothing. Instead, any revision of business habits would probably have to proceed from a general discussion of the problem and mutual agreement within the industry as to the desirable modifications of conventional patterns.

So much for the more general problem. It now becomes pertinent to consider the specific issues involved in the several major forms of nonprice competition which have been described above.

One of the most important and difficult issues involved is the net effect of the emphasis upon quality as a basis for competition. It is desirable that quality be good, that shoddiness be avoided; but at the same time that consumers with limited incomes have available a usable article priced within their means wherever that is possible. It is reasonably certain that the recent trend away from price competition has materially affected the character of the goods on our markets as well as standard of living of consumers.

In some ways this influence has been undoubtedly beneficial. Efforts to improve quality through technical research and otherwise have been stimulated. This is notably true of many of the newer mass production industries manufacturing consumer goods. Thus, it may be argued that the automobile is today a far more satisfactory product than would have been true had competition focused primarily on price. Data have been cited (see pp. 63-67) showing that improvements in the quality of such products as automobiles, refrigerators, tires, etc., are in some ways equivalent to direct price reductions. The benefit which the consumer derives from increased economy of operation or greater durability is concrete and tangible; sometimes it may be translatable into direct price equivalents.

Conversely there is some evidence to show that where the price aspects of competition are strongly stressed, degradation of quality may occasionally follow. If price cutting is the most expedient means of expanding sales, producers may be faced with the necessity of cutting costs correspondingly. Sometimes, of course, costs may be reduced by introducing economies of operation based upon improved technology, but this is not always feasible. The pressure on prices may then be reflected in attempts to reduce labor costs or to skimp on quality. The latter alternative is most feasible in the case of articles whose quality consumers find it difficult to appraise, as where objective standards of quality are unavailable or inadequate. Naturally, this tendency becomes aggravated when price competition becomes unusually severe, as in the case of the buyers' market prevailing during a depression. National Recovery Administration experience reveals many instances of this situation.⁵²

However, the reverse side to this picture is of great importance, particularly to consumers of limited income. Quality features have at times been stressed far beyond their intrinsic worth. Unnecessary gadgets and eye-catching features have been multiplied. Intensive selling campaigns have been conducted to persuade consumers to demand such features in place of price reductions which could have

⁵² The following are excerpted from a study prepared by the Division of Review of the National Recovery Administration.

(*Information Concerning Commodities—A Study in NRA and Related Experiences in Control, Part B, Standards and Labeling.* By Hunter P. Mulford, Division of Review Work Materials, No. 38.)

Mayonnaise Industry.—"At the time of the sponsoring of its code the industry faced a difficult situation, marked by severe, price competition, which was felt to bear particularly heavily upon the makers of higher grade products. Reduction of oil content, use of substitutes, and synthetics, etc., were among the means chiefly employed to reduce costs and increase sales volume based upon low price appeal." (Ibid., p. 18.)

Preserve, Maraschino Cherry and Glace Fruit Industry.—"During the years of the depression, due to steadily increasing price competition, a decided decline in the quality of the industry's products occurred. This was a natural result of endeavoring to reduce costs and by so doing keep selling prices at a fairly low level in an effort to either retain or obtain volume. This is easily understood when the following cost figures are considered. At 2.5 cents per pound for fruit, when 53 pounds of fruit are used to make 100 pounds of pure preserves, the cost per case is \$1.33, but when only 21 pounds of fruit are used to make 100 pounds of preserves, the cost is only 53 cents per case.

"Therefore, it can be clearly seen that by reducing the amount of fruit and increasing the amount of water, plus pectin, considerable savings in costs can be made. Industry representatives discussed this at considerable length at the public hearing on their code. They felt that this lowering of quality was harmful to the industry as a whole, and misleading to the consumers." (Ibid., p. 191.)

Hosiery Industry.—"This depressed condition of the market resulted in a deterioration in the quality of hosiery which, because of the nature of the product, can readily be misrepresented. Thus Mr. A. Propper, executive of a large Chicago department store stated:

"Women's hose . . . is more or less a blind article. Any manufacturer, unknown to us, or anybody, can easily take something out of a hose, that we don't know has been taken out until we find . . . that something has marred the wearing quality of the hose. Courses can be dropped, inferior silk can be used, threads can be tightened, and other small manufacturing qualities that are not discernible to the naked eye can be cheapened."

"Various forms of quality degradation are described in a booklet issued by a manufacturer of unbranded hosiery as skimping by reducing length; reducing number of stitches in the seam; use of lower-twist thread; elimination of reinforcements; insufficient number of courses; dropping of needles in the knitting bar; old stock sold as new; failure to identify fiber, etc.

"That price competition had induced these and other manipulations in quality was alleged. To quote again from Mr. Propper's speech:

"We all know that it is easy to cut hosiery down to a price . . . that is all we have been doing in the past, cutting it down to a price." (Ibid., p. 175.)

Canning Industry.—"Pressure of competition within the industry has reduced prices in recent years, and this reduction in prices has in turn led to reductions in quality. Prices for canned goods were considerably lower during the years 1932-34 than for some years previous, and during this later period some buyers have complained that, after having placed contracts for future delivery, it was practically impossible for them to secure merchandise in conformance with their specifications." (Ibid., p. 138.)

Macaroni Industry.—"Since price competition had become so acute in the industry in the last year and a half, manufacturers felt that they must cut the cost of producing their goods in any way possible. They could not cut their labor costs without running into difficulties, therefore they cut the cost of raw materials. Consequently, there has been a great increase in the use of artificial coloring to take the place of egg content; there has also been increase in the use of inferior grades of flour in place of higher grade semolina; and finally there has been an effort to use a mixture of soya and ordinary flour to simulate semolina." (Ibid., p. 24.)

Cleaning and Dyeing Industry.—"Testimony as to the lowered quality of services which accompanied price competition was given by the President of the National Association of Better Business Bureaus (and by others) at the hearing on prices and code violations for the cleaning and dyeing industry:

"Our files show that refusal to adjust complaints is in the majority of cases excused on the basis that at cut rates the public can't expect service or responsibility.

"From the consumers' standpoint, low prices have resulted in unsatisfactory cleaning jobs and resulting destruction of merchandise at a very alarming rate." (Ibid., p. 212.)

contributed materially to making available a larger volume of goods to the consuming public. Where cheaper models stripped of such features have been introduced, they have often been used primarily as leaders; sales effort by the retailer has been devoted to switching the consumer from such cheaper models to more expensive ones carrying luxury features of doubtful value.

Sometimes a group of manufacturers in an industry makes deliberate efforts to establish unnecessarily high standards of minimum quality. By precluding the appearance of low grade, though satisfactory, merchandise on the market, they hope to limit the scope of price competition. On the other hand the product which it is sought to bar may, when properly used, fill a perfectly legitimate need among consumers in the lower income brackets. For example, certain members of the plumbing fixtures industry have constantly sought to prevent the marketing of "culls" or "seconds" as a means of protecting the existing price structure. These efforts were the subject of antitrust proceedings by the Department of Justice. According to the Court:

Defendants (in District Court) represent the Standard (Standard Sanitary Mfg. Co.) as the dominant * * * and the only honest manufacturer, pointing out to other manufacturers the worthlessness of their output, they not having the Arrott patent; also the dishonesty of * * * putting out "seconds," the inferiority of which was discernible only by experts * * * thereby * * * "discrediting the ware and demoralizing the market and business." To avert these evil results * * * the Standard was willing to forego the advantages which its ownership of the Arrott patent gave it and confer them upon the other manufacturers. But upon terms, "First and foremost" * * * that no "seconds" should be marketed.⁵³

Later, there was an endeavor to accomplish this same purpose under the National Recovery Administration by prohibiting the sale of culls under the terms of the Code. According to a National Recovery Administration study:

Opposition to the provision was voiced by several smaller manufacturers on the ground that certain types of production equipment produced a larger proportion of culls; that to prohibit the sale of culls would drive such plants out of business; that there was a demand for this grade of ware, which had sound utility; and that to ban it would increase the cost of plumbing fixtures to the public generally. (Mulford, op. cit., p. 16.)

Similarly, the bedding industry has made continual efforts to prevent second-hand materials from being used in the manufacture of bedding even after proper sterilization. In a few States, laws to this effect were enacted, but they were uniformly held unconstitutional on the grounds that:

The business here involved is legitimate and useful; and, while it is subject to all reasonable regulations, the absolute prohibition of the use of shoddy in the manufacture of comfortables is purely arbitrary and violates the due process clause of the fourteenth amendment.⁵⁴

Sometimes, instead of attempts to bar inferior articles from the market absolutely, it has been sought so to stigmatize them as to render them unsalable. Thus canners unsuccessfully urged the Department of Agriculture to require substandard products to be labeled in such a manner as to discourage their purchase.

Excessive emphasis upon price competition, then, may lead to deterioration of quality; undue emphasis upon quality may result in unwarranted increases in price.

⁵³ *Standard Sanitary Mfg. Co., et al. v. U. S. of America* (226, U. S. 20).

⁵⁴ *Ibid.*, p. 29.

It is exceedingly difficult to strike a balance between those aspects of quality competition which may be considered beneficial and those which appear detrimental to the efficient functioning of the economy. Each product presents a different situation. The line between the desirable and the unnecessary in any specific case is one which must in the last analysis be drawn by the consumer. It is appropriate, however, for Government to endeavor to devise such standards and to place at the consumer's disposal such technical information as may make it possible for him to make these decisions intelligently.

Similar conflicting considerations apply to the second broad issue—the competitive emphasis upon brands, trade-marks, and advertising. To an important extent such devices are necessary and useful. The creation of mass demand does in many cases permit the introduction of improved methods of production and the material reduction of manufacturing costs. It is probable that the rapid growth of the newer mass-production industries, particularly in the automotive and the electrical household equipment fields, has been facilitated by the intensive use of advertising.

Certainly, too, the use of brands and trade-marks to distinguish the product of rival sellers is an essentially useful technique, both to the producer who has acquired a deserved prestige and to the consumer whose problems of choice are facilitated.

On the other hand, there have been manifestations of growing dissatisfaction with the manner in which brands and advertising are used today. Consumers, in particular, have come to question the reliability of the guides furnished them by advertising and branding. The very rapid growth of the organized consumer movement during recent years is largely a reflection of this dissatisfaction. Businessmen have become increasingly concerned with this reaction of consumers. The proportions and significance of this discontent were discussed in a recent issue of *Business Week*:

This is a study of organized discontent—the discontent of some consumers with the things they buy and the way those things are sold to them. It is a discontent which feeds upon itself and which business cannot afford to overlook because it has already assumed the proportions of a real threat to producers and distributors of advertised brands.⁵⁵

Basically, the criticism centers about the failure of advertising and branding to serve as adequate guides to quality, and to their tendency to divert the stream of competition into inefficient channels. While both those allegations are serious, it is the latter which is of primary importance to the present discussion, and with which public policy is concerned.

It has been pointed out that one effect of the creation of mass demand through advertising may be the reduction of costs of manufacture as volume increases. On the other hand, it must be conceded that in some lines of business any such reductions in cost show little if any tendency to become translated into lower prices. Thus, according to Milton Handler—

It cannot be denied that the current bewildering use of brands is economically wasteful, and undoubtedly tends to increase the costs of distribution. The tinsel phrase is frequently designed to camouflage shoddiness of quality. The fortunes spent on popularizing catch words and nonsense syllables could better be devoted to the improvement of product and the dissemination of detailed in-

⁵⁵ *Business Week*, April 22, 1939, p. 39.

formation regarding it, which is so essential to intelligent consumption. But intelligent consumption also requires some means of identifying today the articles that pleased or displeased yesterday. This is the primary function of the mark. The unfortunate excrescences of modern trade-mark usage should not blind our perception of this fact.⁵⁶

The very wide spread between production costs and retail prices for certain common drugs, toiletries, and cosmetics has been described. (See pp. 80-83.) This spread does not necessarily represent any inordinate profits to either manufacturer or distributors; much of it represents the cost of advertising and sales campaigns and elaborate packaging. Regardless of the cause for the spread, however, its existence does imply the possibility of greatly reducing the prices of products of this kind by altering the focus of competition. Such a reduction in prices would, of course, be equivalent to a material increase in consumers' purchasing power for other products.

Here again, there seems sufficient cause for public concern and proper scope for public action. The development of adequate commodity standards and the establishment of regulations requiring informative labeling in accordance with such standards would go far toward fostering the desirable and discouraging the undesirable aspects of advertising and branding. The consumer should be in a position to appraise the significance of advertising claims and of brand names against a background of authentic product information.

In summary, it seems that the less desirable aspects of the trend toward competitive reorientation are stimulated by at least two avoidable conditions. One of these is the concerted or collusive effort of certain business firms to prevent the use of sales tactics which they deem inexpedient. The second is the inadequate information of most consumers with regard to the character of commodities offered on the market. Both of these are appropriate subjects of public concern; both may, to an extent, yield to corrective governmental measures.

By pursuing its traditional policy of opposing collusive action by business firms, Government may ease artificial impediments to the use of socially desirable forms of competition, particularly of price competition. This implies also that individual business firms must be protected in their freedom to choose competitive channels from coercion imposed by their rivals who prefer that such channels be not used. To some extent this pursuance of accepted antitrust policy may also serve to minimize the development of wasteful escape devices resulting from the establishment of restraints upon one or another form of competition. It would seem highly desirable to consider seriously the consequences of imposing legal restraints upon the direction of competitive effort, by such legislation as the resale price maintenance acts or other laws seeking to restrict price competition. By thus endeavoring to keep all avenues of competition equally open, the orientation of competitive effort may be determined more by the combined decisions of buyers and sellers expressed in the market place, and less by the monopolistic determination of specific sellers.

In the second place, Government can intensify and expand its program for the establishment of commodity grades and standards and its requirements as to informative labeling. Such a program might

⁵⁶ Handler, Milton, *Unfair Competition*, Iowa Law Review, January 1936, pp. 185-186.

well be coupled with a broad plan for consumer education. In this way the consumer would be enabled to profit by the trend toward emphasis upon quality. He would be made competent to judge rival products on their merits instead of being forced to rely largely upon claims advanced by sellers. The accumulated pressure of buyers equipped with an adequate basis for judgment might, in turn, serve to direct competition into socially desirable and economically efficient channels.

CHAPTER IV ¹

THE ELECTRICAL EQUIPMENT INDUSTRIES—AN ILLUSTRATIVE CASE

SUMMARY

So far, problems of price and sales policy have been considered in a broad setting. The complexities involved, and the dangers of broad generalization or over-simple solution have been stressed.

In order to lend concreteness to the discussion a type case has been selected which presents in specific form many of the policy issues encountered in the preceding analysis. This case comprises a group of industries manufacturing household electrical equipment, such as refrigerators, washing machines, vacuum cleaners, etc.

These are all relatively new industries which have experienced their major growth during the past two decades. A number of them seem, at the present time, to have entered stages in their development which require new decisions as to manufacturing and sales policies. The analysis of these industries contained in this chapter shows that they have all experienced similar patterns of growth. First is the experimental stage during which the product is being developed. Many crudities are still apparent. Costs are high because of the lack of standardization, coupled with a low aggregate volume of output. Prices are correspondingly high and sales are necessarily confined to a limited group which can afford the luxury of experimentation.

This period merges insensibly into one in which the product has become relatively satisfactory, manufacturing methods have become standardized, and prices fall in anticipation of, and partly as a result of, the introduction of mass production. The product passes out of the class of a curiosity and obtains a wider and wider general appeal. Sales expand very rapidly as more and more consumers realize its convenience or desirability. Usually price reductions are slightly ahead of sales expansion. During this phase of growth the expansion of sales seems at times almost limitless. Even the depression of 1930 to 1933 exerted no more than a very limited effect upon the sales of refrigerators and washing machines. By the fall of 1933, for example, the sales of washing machines were exceeding the 1929 rate by a substantial margin. During such a period, also, as profit possibilities seem very attractive, the number of companies in the field often increases sharply. Eventually, however, signs of approaching maturity become apparent. The first symptom seems to be an arrest in the progressive decline in costs and prices. Then the rate of increase of sales begins to taper off. Distribution of the product among families in the upper and middle income brackets has reached a high level. The number of remaining original prospects in those classes dwindles

¹ Ch. IV was prepared by Walter C. Kistm and John M. Blair.

rapidly, even despite the constant increase in the number of wired homes, particularly in rural areas.

At this point the industries begin to display very marked sensitivity to changes in general business conditions. Once the early period of dynamic growth has passed, they are no longer almost depression-proof. The durable nature of the product involving the possibility of postponing purchase or replacement until conditions are favorable renders them subject to extreme cyclical fluctuations. For example, in contrast to the record of the period 1929-1933, the number of washing machines sold fell 30 percent from 1937 to 1938, while the sales of refrigerators declined more than 45 percent.² At the same time, recovery in sales volume has been longer delayed and much less rapid.

At this point, then, the members of the industry are faced with the urgent need of reorienting their sales policy to changing conditions. Two major fields for sales promotion are available. One of these is the expansion of the market among families in the low-income groups. The other is the development of the replacement market, the substitution of new equipment for outworn or obsolete units. The tactics to accomplish these ends are conditioned by many other market factors such as the rate of obsolescence of equipment, the channels and costs of distribution, the possibilities and limitations of installment selling, and so on.

Until 1940 manufacturers of these products had formulated no clear policy to meet these changing conditions. There had been some effort to produce cheap "stripped" models devoid of all luxury features to appeal to lower income groups. There had been a few scattered attempts to deal with the replacement problem. Those approaches, however, seem to have been largely exploratory.

The first evidence of any important change occurred in the refrigerator industry during the early months of 1940. During the second week in January, one manufacturer announced drastic price reductions for its 6-foot stripped model and its competitors immediately followed its lead. At the same time economies were sought in the costs of both manufacturing and distribution. It is too early to determine whether these moves represent a true change in long-term policy, or whether they merely represent a temporary "price war" touched off by the action of a single manufacturer. In either event it seems significant that sales have risen sharply; during the first quarter of 1940 they were 33 percent higher than during the corresponding months of 1939.

It is apparent that the formulation of sales policies designed to exploit the potential markets of these industries to the maximum involves many and complex issues. The nominal price alone is but one of these. Methods and costs of distribution must be subjected to searching analysis. Decisions must be made as to collateral marketing policies. The treatment of used equipment is a basic issue. Another of major importance is the financing of conditional sales. More liberal credit terms may stimulate the market immediately, but failure to maintain sound business practices in the process incurs a sure penalty. The precise balance which is to be struck between improvements in quality and reductions in price is of prime significance. Moreover, all of these decisions must be adjusted to changes in general

² This difference may have been due partly to the fact that prices were reduced during the former but not during the latter period.

business conditions as well as to the markets for the specific product in question.

The problems confronting these industries are typical, in many ways, of those encountered in many other industries producing consumers' durable goods. The consumers' durable goods industries have played a particularly important role in the economy of the last generation, in creating opportunities for new investment and employment and in opening new horizons for consumer enjoyment. At the same time, during periods of business recession, the drastic contraction of employment and investment opportunities to which these industries are generally subject creates acute social and economic problems.

The manner in which the concerns comprising these industries adapt their sales policies to changing market conditions will largely determine whether they will expand further, remain static, or decline. It may also effect, at least to a limited extent, the stability of production during the swings of the business cycle.

Consequently, such decisions regarding sales policy are proper subjects of public concern. A socially and economically desirable policy is one which would permit the widest possible distribution of sales so that more consumers may have the benefit of these products, afford maximum opportunities for employment and the investment of idle funds, and achieve a degree of stability adequate to minimize the distress attendant upon severe cyclical fluctuations. The orientation of policy to attain those objectives must embrace the entire problem; particularly it should be recognized that although price behavior is important, the issues far transcend the field of price.

Moreover, it should be emphasized that governmental action need not be regulatory in character. Thus the Federal Housing Administration for a time insured loans for purchases of certain types of electrical equipment and stimulated sales of these products. The Electric Home and Farm Authority has also assisted in financing sales of many kinds of electrical equipment; in the process it encouraged the production of relatively inexpensive models to meet the needs of low income groups. The Rural Electrification Administration, by widening the distribution of electric power, has expanded the potential appliance market. Efforts to reduce utility rates may also have contributed materially to the expansion of this market.

PRICE AND PRODUCTION TRENDS

The growth of the electrical-appliance industries during the past 10 or 15 years has followed a pattern which is typical of the early stages of most new industries. Rapid technological developments and sharp price reductions made possible mass demand and the economies of mass production. The following tables compare the average retail values of refrigerators, washing machines, vacuum cleaners, radios, and electric ranges for the years 1929, 1932, and 1937, with their sales during the same years. Charts XII to XV show the trends of average retail value and sales for these products, with the exception of radios, for each year between 1927 and 1938.³

³ Average unit retail value was selected as the basis for this analysis instead of some form of price index for two reasons: (1) It is difficult to adjust the usual type of price index, which is supposed to relate to a more or less uniform commodity, to the very rapid changes in product which occurred in these industries during the period covered, and (2) average unit value figures are more useful because they portray the average outlay by the consumer for the commodities involved.

In the case of each of these industries the period of most marked price decline was from 1927 to 1932, whereas the period of most vigorous sales expansion was from 1932 to 1937. Apparently the stimulus to sales caused by the decline in prices was somewhat delayed due to the depression from 1929 to 1932.

TABLE 10.—Average retail value and sales of selected electrical appliances

AVERAGE RETAIL VALUE

Item	1929		1932		1937	
	Average retail value	Index, 1929=100	Average retail value	Index, 1929=100	Average retail value	Index, 1929=100
Refrigerators.....	\$292	100	\$195	67	\$171	59
Washing machines.....	113	100	59	52	72	64
Vacuum cleaners.....	46	100	35	76	46	100
Radios.....	133	100	48	30	56	42
Ranges.....	165	100	150	91	134	81

SALES

Item	1929		1932		1937	
	Units	Index, 1929=100	Units	Index, 1929=100	Units	Index, 1929=100
Refrigerators.....	778,000	100	798,000	103	2,310,000	297
Washing machines.....	956,000	100	569,830	60	1,465,405	153
Vacuum cleaners.....	1,395,745	100	557,288	40	1,706,337	122
Radios.....	4,435,000	100	2,477,000	56	6,278,267	142
Ranges.....	152,781	100	60,000	39	405,000	265

The decline in average unit retail value in these industries, in general, ended in 1932. Between 1932 and 1939 average unit values have shown comparatively little change. However, sales rose sharply until 1937.

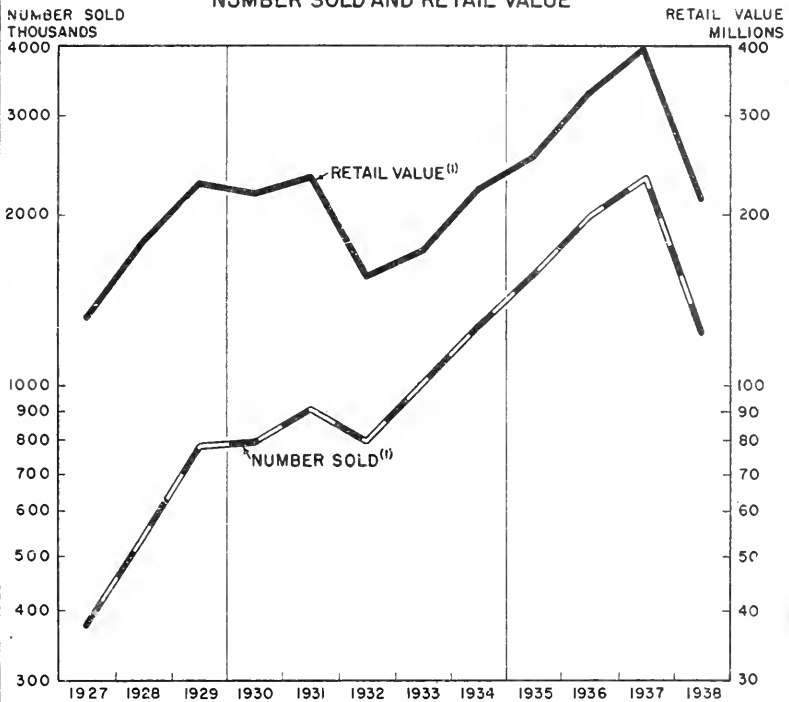
In the case of electric refrigerators, for example, the average retail value declined from \$350 in 1927 to \$195 in 1932; 1 year later it fell to \$170; it has remained near that figure to 1938. Sales rose from 375,000 units in 1927 to 778,000 in 1929. The increase was interrupted but not reversed by the depression; in 1932 sales were 798,000 or slightly more than in 1929. During the subsequent 5 years the expansion was resumed even more vigorously; in 1937 2,310,000 boxes were sold.

Similarly, the average unit value of washing machines fell from \$143 in 1927 to \$59 in 1932 and remained stable at about the latter level until 1936. In 1937 and 1938 the average value rose to approximately \$72. Probably this last increase reflects a shift in buying from cheaper to more expensive models rather than any change in prices as such. Sales of washing machines increased slightly from 1927 to 1929, then declined moderately through the depression. With the first signs of business recovery, however, sales expanded sharply; the 1933 level actually exceeded the previous peak which had been reached in 1929. This upward trend continued to a maximum of slightly over 1,500,000 machines sold in 1936 in contrast to the pre-depression peak of 956,000.

CHART XII

ELECTRIC REFRIGERATORS

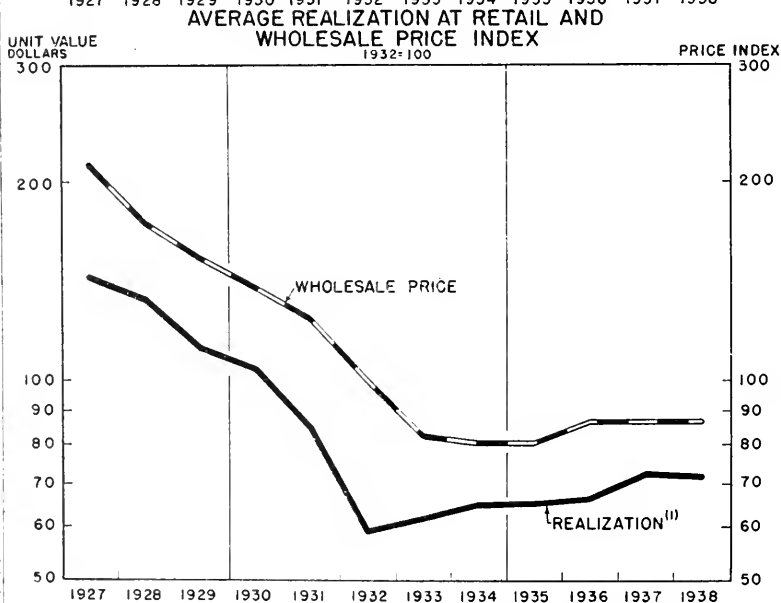
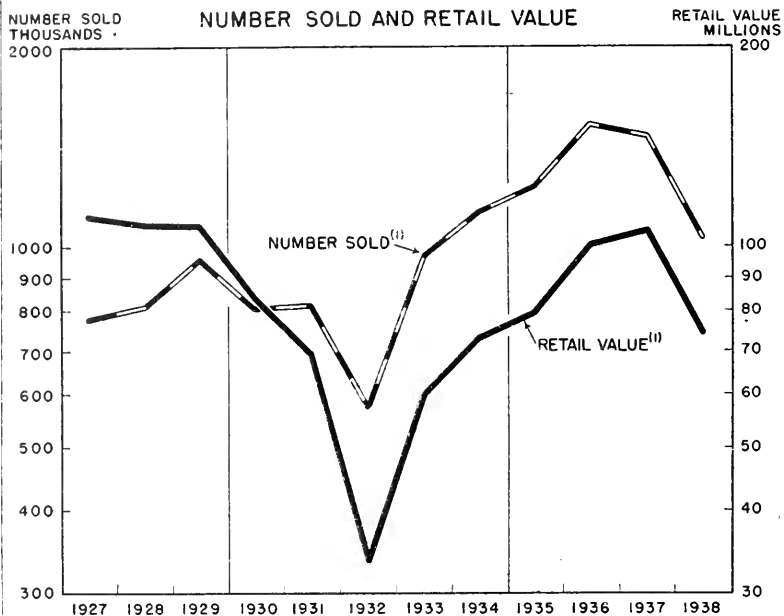
NUMBER SOLD AND RETAIL VALUE

AVERAGE REALIZATION AT RETAIL AND
WHOLESALE PRICE INDEX
1932=100

(1) SOURCE: ELECTRICAL MERCHANDISING

CHART XIII

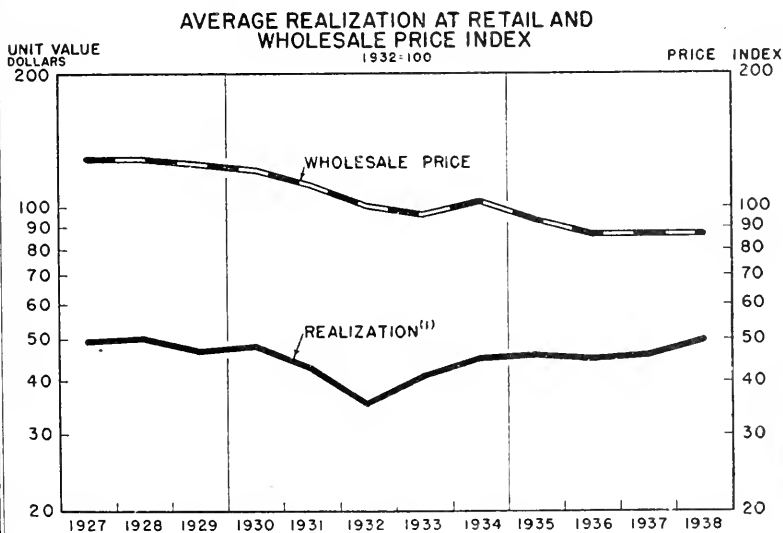
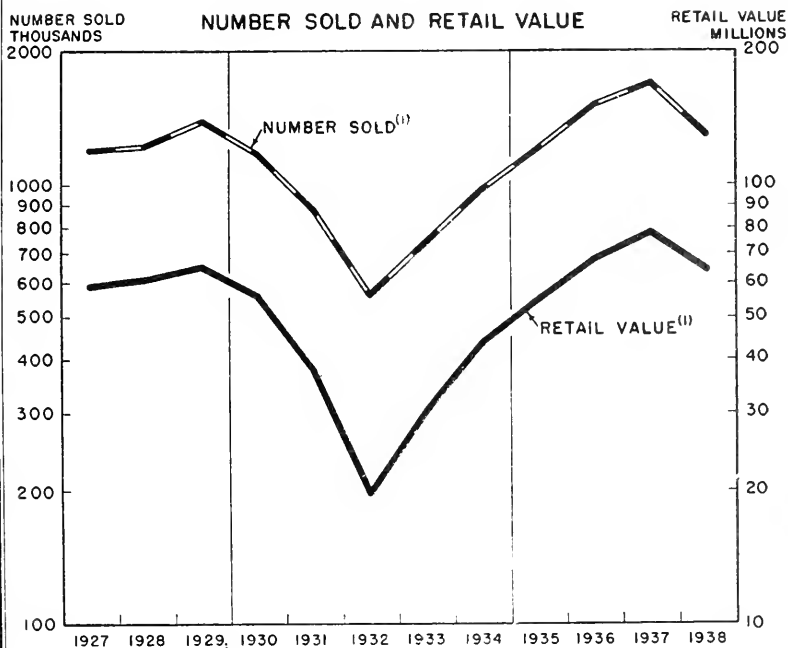
ELECTRIC WASHING MACHINES



(1) SOURCE: ELECTRICAL MERCHANDISING

CHART XIV

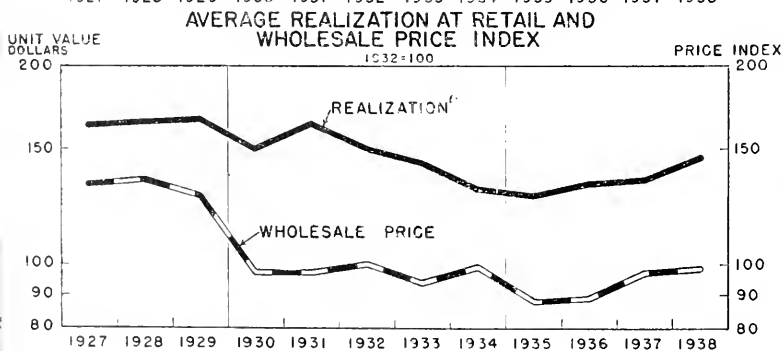
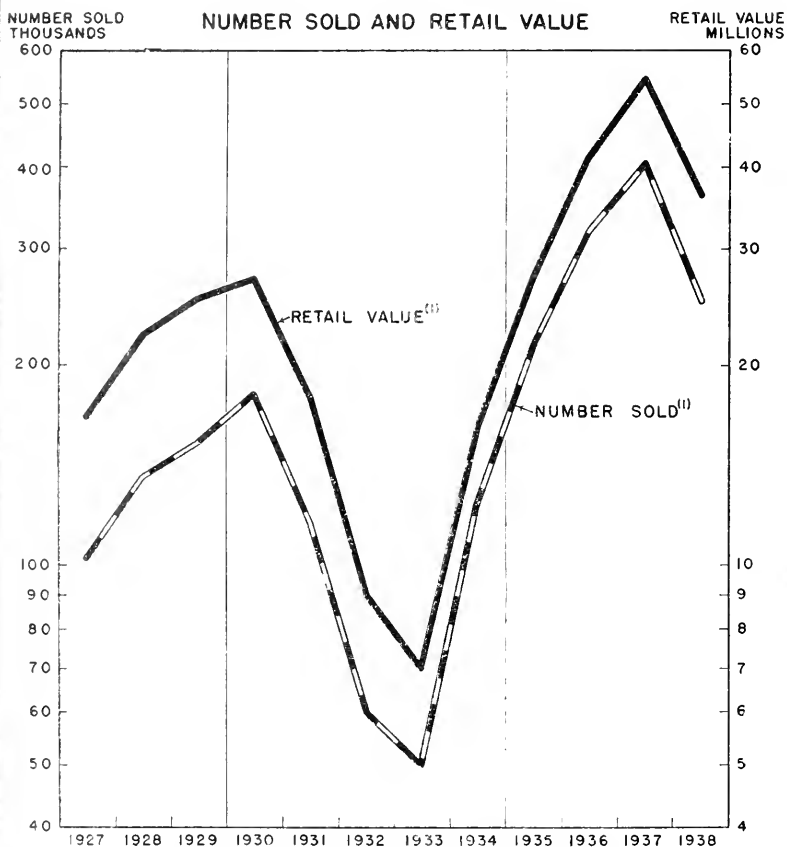
VACUUM CLEANERS



(1) SOURCE: ELECTRICAL MERCHANDISING

CHART XV

ELECTRIC RANGES



(1) SOURCE ELECTRICAL MERCHANDISING

The electric range industry is somewhat younger than the two previously mentioned. Presumably reflecting its more recent growth, the decline in unit value did not get under way until 1931; between that year and 1935, however, there was a material fall in the average prices paid by consumers. 1937 sales of 405,000 units were more than $2\frac{1}{2}$ times as large as the 1929 peak of 153,000 and were more than 6 times as great as the 1932 low of 60,000.

The electric vacuum cleaner industry constitutes a possible exception to the pattern described, probably because it is slightly older than those previously considered and had achieved a more mature stage of development prior to 1927. Nevertheless the all-time sales peak was attained in 1937. The average retail prices of vacuum cleaners declined from \$49 in 1927 to \$35 in 1932 and then rose, stabilizing at approximately \$45 for the years 1934-37. This rise probably reflected an increase in the proportion of the higher-priced models sold, rather than any change in price as such. The sales of vacuum cleaners increased from 558,000 units in 1932 to 1,706,000 in 1937.

Taken as a whole the price and sales behavior of these new industries manifest three basic common characteristics:

- (1) A marked decline in price between 1927 and 1932.
- (2) A relative stabilization of price near the low level reached in 1932.
- (3) A great increase in sales during the period 1932-37.

To these three characteristics may be added a fourth. In each case there was an abrupt decline in sales during the "recession" of 1937-38. During this period electric refrigerator sales declined by 46 percent, electric washing machines by 30 percent, vacuum cleaners by 24 percent, and electric ranges by 38 percent.

These declines came immediately after each of these industries had reached a sales volume never before attained. Presumably they reflected basic changes in market conditions. An important factor is probably market "saturation."

MARKET SATURATION

For the electrical appliance industries, market saturation may be measured in terms of the proportion of homes wired for electricity in which these appliances are installed. In appraising the significance of this measure, it is important to remember that the number of wired homes is continually increasing, both as new homes are built and as the use of electric power is extended. This is particularly true in rural areas, partially due to the activities of such government agencies as the Tennessee Valley Authority and the Rural Electrification Administration. (The significance of these programs in creating new markets for electrical appliances is discussed below—pp. 158-160.) Since the number of potential consumers is thus growing, the degree of saturation in terms of wired homes prevailing at any time should not be construed as setting any fixed limit to the available market for original sales. Nevertheless, this measure does afford an indication of the potential market available at any given time, and the rapid increase in the percentage of saturation for many of these appliances shows that the market for original sales is steadily dwindling despite the increasing availability of electric power. At

the same time, the figures also show that complete saturation has not even been approached for any of these appliances; a substantial original market remains whose effective development obviously depends upon the sales policies adopted by manufacturers.

The trend of market saturation from 1925 through 1937, measured in this way, for electric refrigerators, electric washing machines, electric vacuum cleaners, and electric ranges is shown in chart XVI and in the following table:

TABLE 11.—*Saturation of the market*

Year	Percentage of wired homes owning—			
	Refrigerators	Washing machines	Vacuum cleaners	Ranges
1925.....	(1)	21	31	3
1926.....	2	27	37	3
1927.....	4	28	39	3
1928.....	6	30	41	4
1929.....	9	33	44	4
1930.....	13	35	44	5
1931.....	17	41	45	5
1932.....	22	39	47	6
1933.....	25	44	49	6
1934.....	29	46	48	6
1935.....	34	49	48	7
1936.....	41	53	49	8
1937.....	49	56	49	9
1938.....	52	58	49	10

¹ Less than 1 percent.

For electric refrigerators, electric washers, and electric ranges the degree of saturation has steadily increased, especially during the period 1932-37. The vacuum cleaner market, on the other hand, has not experienced such a sharp increase during recent years because it was already saturated to a much higher degree than were any of the other fields at the beginning of the decade.

A comparison of saturation in each of the industries with the extent of sales decline during two periods of business recession is presented in the following table. Saturation in 1929 is shown in relation to the change in sales between 1929 and the depression years 1932-33,⁴ and saturation in 1937 is compared with the sales decline between 1937-38.

TABLE 12.—*Market saturation and sales*

Item	Percent saturation 1929 ¹	Percent change in number sold 1929 to average 1932-33	Percent saturation 1937	Percent change in number sold 1937-38
Refrigerators.....	9	+17	49	-46
Washing machines.....	33	-20	56	-30
Vacuum cleaners.....	44	-54	49	-24

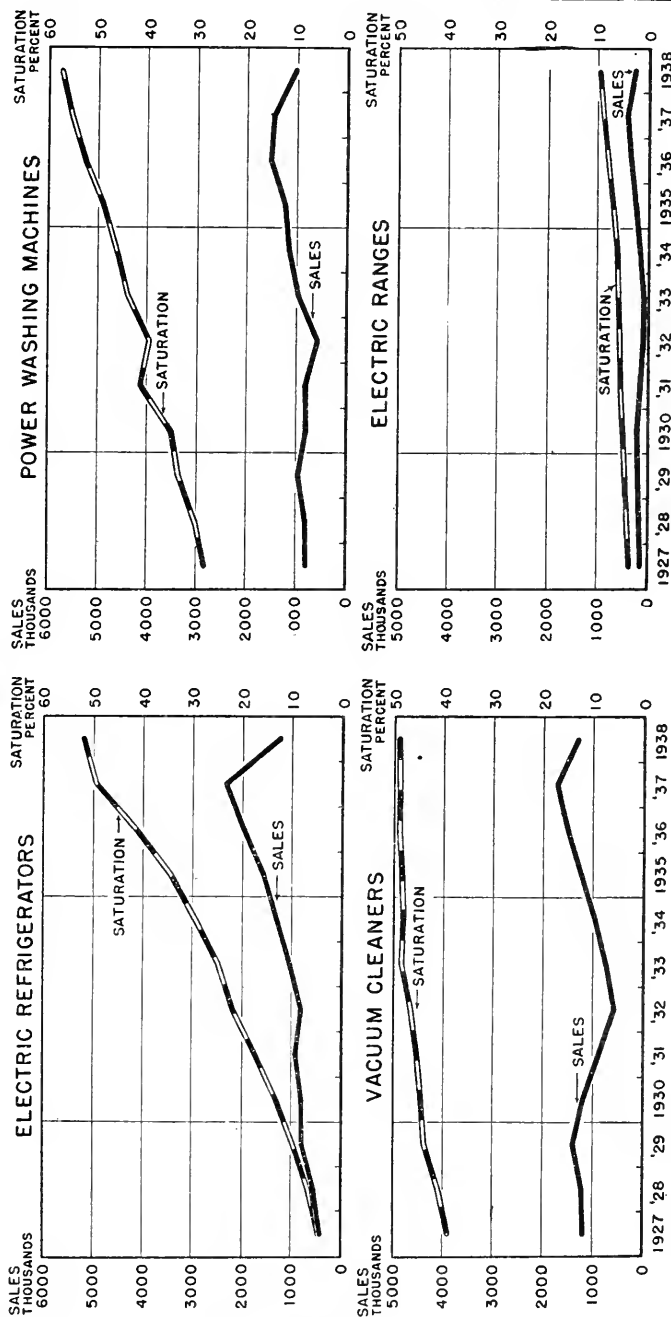
¹ Percent of wired homes.

Source: Electrical Merchandising.

⁴ The 1932-33 average was considered to give a better measure of depression decline than either of these years taken separately. For refrigerators and washing machines 1932 sales showed a drop which was somewhat extreme. On the other hand, 1933 sales for both of these industries showed a very sharp revival. Consequently, the two were averaged to obtain a more generally representative figure.

CHART XVI

SALES AND SATURATION



U. S. BUREAU OF LABOR STATISTICS

SOURCE: ELECTRICAL MERCHANDISING

For refrigerators a sharp drop in sales between 1937 and 1938 contrasted with an actual increase between 1929 and 1932-33. In the case of washing machines there were declines during both periods, but that between 1937 and 1938 was materially greater although the recession in general business activity was much less prolonged. Between 1929 and 1937, however, the degree of saturation for refrigerators had increased fivefold, and for washing machines it had almost doubled. The sharpest difference in the trend of sales occurred in electric refrigerators in which the change in saturation was most marked.

The sales of vacuum cleaners declined much more severely during the 1929-33 depression than did those of either refrigerators or washing machines. At the same time the degree of saturation for this product was materially higher than for either of the other two.⁵

Apparently, therefore, the change in the character of the market is largely responsible for the change in the sensitivity of these industries to depression influences. As long as there is a wide market for original sales, declines in the rate of general business activity seem to retard growth somewhat, but do not result in severe contractions of sales. As the original market becomes more nearly saturated, however, the picture changes. This is probably true particularly of that segment of the market which involves the replacement of used equipment, since replacements are usually postponed during periods of general economic stress. Consequently, the exploitation of the original market, coupled with the tendency of consumers to postpone replacements during periods of bad business, results in making industries of this kind increasingly sensitive to depression influences as the degree of market saturation increases.

Saturation by income groups.—Market saturation is particularly significant in relation to income groups, since it reveals the particular segments of the market which constitute the most favorable prospects for "new" sales.

A study of consumer purchases⁶ by the Bureau of Labor Statistics in 1935-36 shows the distribution of ownership of electric refrigerators, washing machines, vacuum cleaners, and radios,⁷ by various income groups.⁸ This survey covered a representative sample group of families restricted, in this case, to urban areas and to families whose heads were native-born and of native parentage. These data, as presented in charts XVII to XX inclusive, give an approximate indication of market saturation for this specific sector of the population and may also afford some guide to conditions prevailing in the market as a whole.

The charts compare the degree of saturation (i. e., the percentage of families having these appliances in each income group) for these products in selected cities in six areas of the country. The patterns

⁵ Electric ranges have been omitted from this discussion. Although saturation as measured by wired homes undoubtedly affects their sale, this effect is probably overshadowed by the influence of the rate of new-home construction. It may even be contended that new-home construction constitutes almost the entire true "original" market for electric ranges; that the substitution of an electric range for a used gas or coal range is largely in the nature of a replacement sale.

⁶ The Study of Consumer Purchases, in which the Bureau of Labor Statistics and the Bureau of Home Economics have cooperated with the National Resources Committee, the Central Statistical Board, and the Works Progress Administration, provides data on the average purchases of families, including husband and wife, both native-born, at different income levels, in cities in different parts of the country for the year 1935-36.

⁷ The radio data are presented to illustrate an industry whose market is almost completely saturated.

⁸ This study of consumer expenditures relates to nonrelief families including husband and wife, both native-born, in 16 urban areas throughout the country.

for refrigerators and vacuum cleaners are similar, with a rapid and progressive increase of saturation as income rises. In the case of radios, saturation is almost complete at a relatively low income level. Washing machine ownership presents a contrast; there is a rise in the rate of ownership until the \$1,250-\$1,500 income class is reached, but higher income brackets show little if any further increase. This probably represents the greater tendency of upper income groups to send laundry to commercial laundries.

Chart XVII presents ownership data for electric refrigerators in more detail. The pattern is generally consistent; in each case saturation increases rapidly with income. The lower income groups have not been reached effectively while, in general, the market among the upper groups is almost completely saturated.

The two "metropolises" (i. e., New York and Chicago) present exceptions to this pattern; the curve flattens out in the middle and upper income groups. These exceptions can be explained by the large number of such families living in apartment houses in which refrigerators or refrigeration are furnished by the landlord. Although this practice is most marked in these two areas, it is not confined to them. In interpreting these figures, therefore, it should be recognized that in general the percentage of families in the middle and upper income levels using electric refrigerators is greater than the percentage owning them.

The rapid increase in the proportion of families owning this equipment as income rises, as shown by the steepness of the curves for all areas, indicates that future sales to the upper and upper middle income groups must be largely for replacement, and that the major potential market for original sales is to be found among families with lower incomes.

In 1935-36 only 17 out of 100 homes having incomes of less than \$1,500 reported ownership of electric refrigerators. The market in the middle-income groups, \$1,500-\$3,000, was approximately 54 percent saturated while, for families with incomes of \$3,000 and over, the ratio was 80 percent.

For vacuum cleaners the saturation pattern is similar to that of electric refrigerators. Saturation increases rapidly as income rises; 29 percent of the families in the \$250 to \$1,500 income groups own cleaners; for the middle income group the figure is 71 percent; for the upper group it is 90 percent.

In the case of radios it is apparent that saturation is practically complete for all income groups except the very lowest; the radio market is therefore almost entirely on a replacement basis or on a basis of selling extra radios for other rooms in the home.

The charts also show certain geographical differences. The market saturation curve for most items is lower in the Southeast even among white families than in the other areas. This is particularly true of washing machines and vacuum cleaners. In the case of electric refrigerators, the contrast is not so great, probably because of climate.

In most areas, the saturation curve for large cities is slightly above the curves for small cities. Finally, for each of the items, the saturation curves for small cities, middle-sized cities, and large cities display a surprising degree of uniformity; that is, there is the same general

CHART XVII

HOUSEHOLD EQUIPMENT OWNERSHIP BY INCOME GROUPS

ELECTRIC REFRIGERATORS

1935-36

NON-RELIEF FAMILIES INCLUDING HUSBAND
AND WIFE BOTH NATIVE BORN

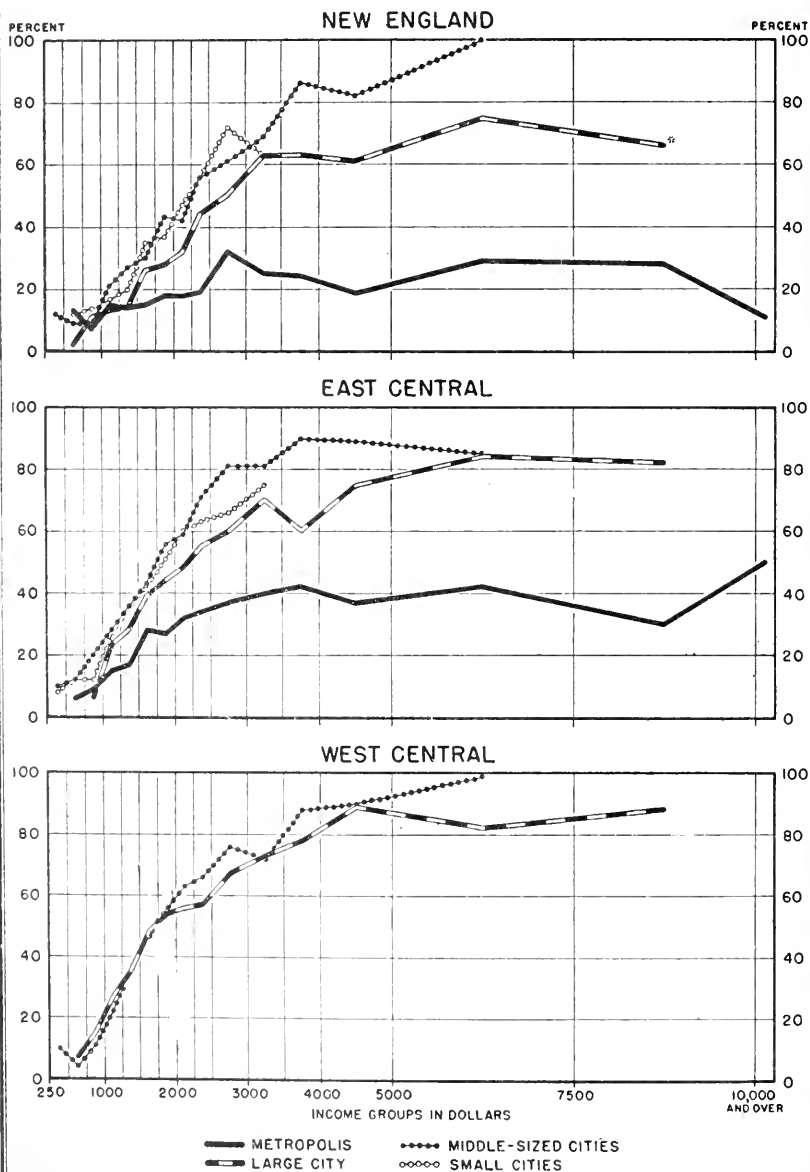


CHART XVII—Continued

HOUSEHOLD EQUIPMENT OWNERSHIP BY INCOME GROUPS

ELECTRIC REFRIGERATORS

1935 - 36

NON RELIEF FAMILIES INCLUDING HUSBAND
AND WIFE BOTH NATIVE BORN

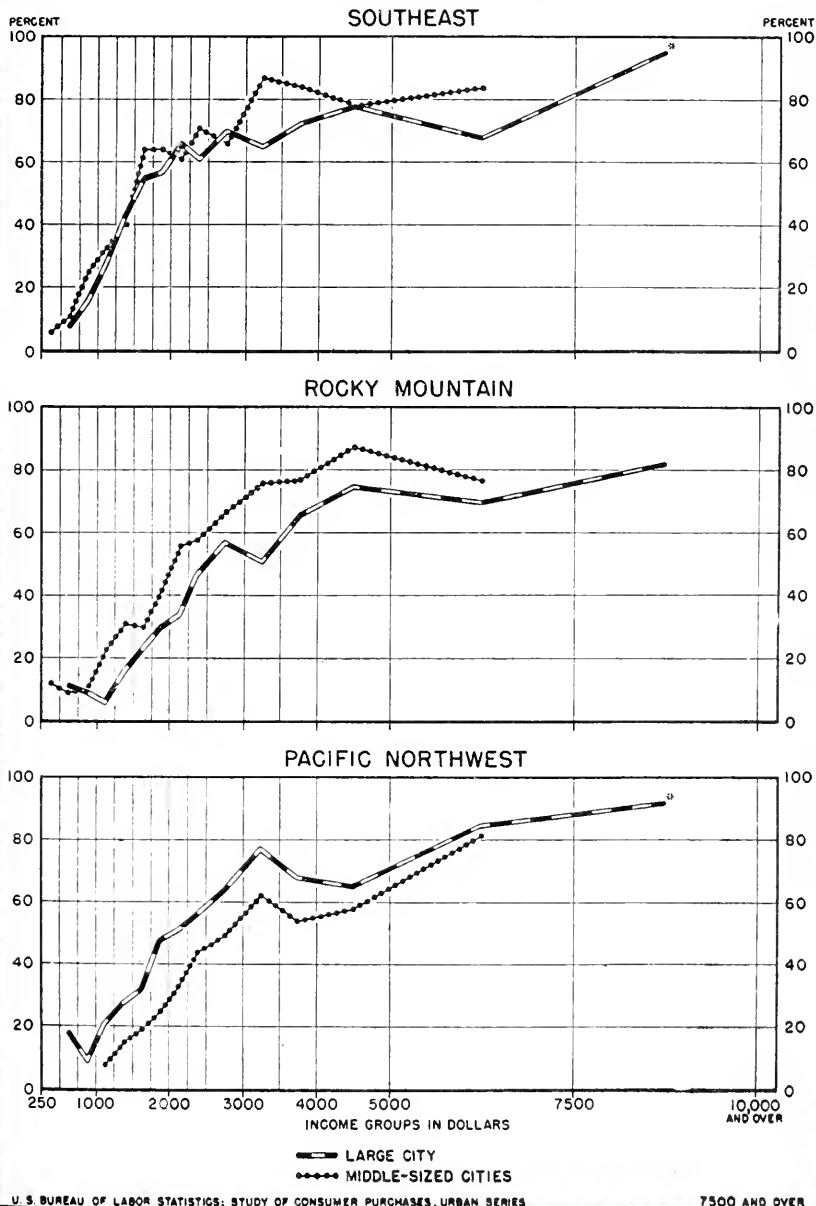


CHART XVIII

HOUSEHOLD EQUIPMENT OWNERSHIP BY INCOME GROUPS POWER WASHING MACHINES 1935 - 36

NON-RELIEF FAMILIES INCLUDING HUSBAND
AND WIFE BOTH NATIVE BORN

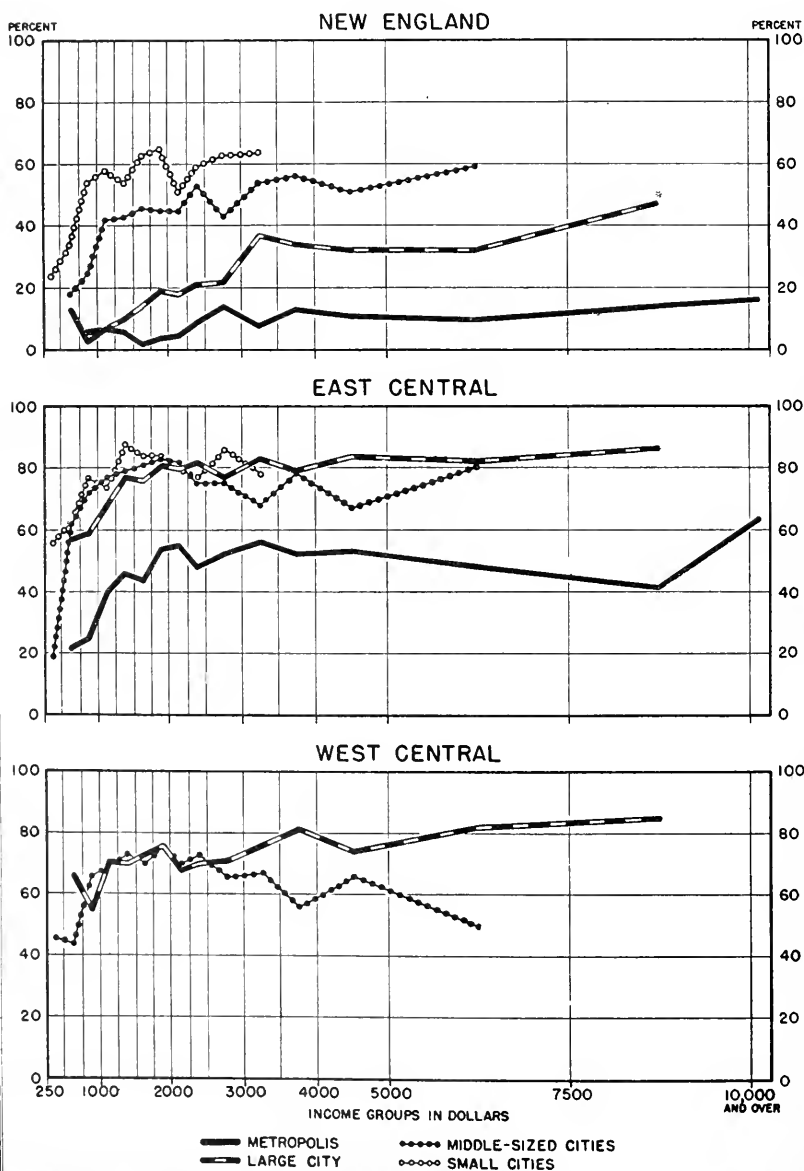


CHART XVIII—Continued

HOUSEHOLD EQUIPMENT OWNERSHIP BY INCOME GROUPS POWER WASHING MACHINES 1935 - 36

NON-RELIEF FAMILIES INCLUDING HUSBAND
AND WIFE BOTH NATIVE BORN

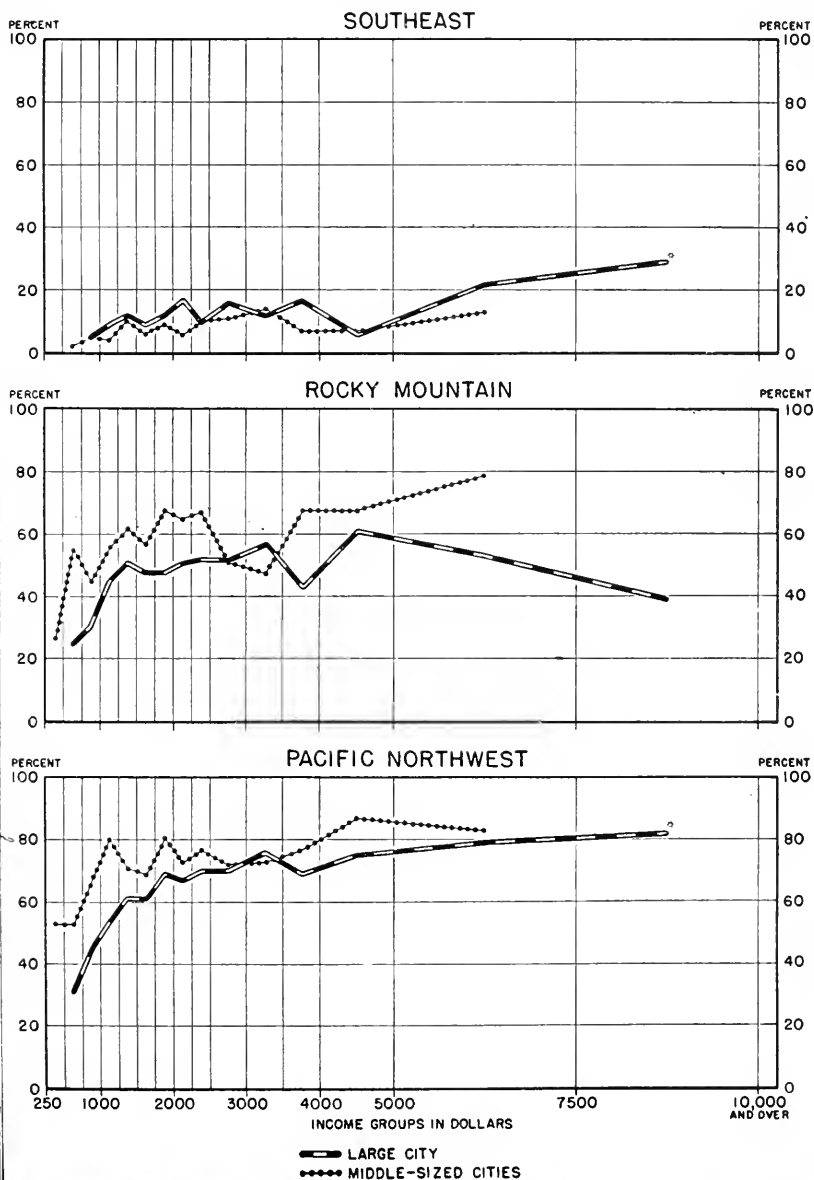


CHART XIX

HOUSEHOLD EQUIPMENT OWNERSHIP BY INCOME GROUPS
VACUUM CLEANERS
1935 - 36

NON RELIEF FAMILIES INCLUDING HUSBAND
AND WIFE BOTH NATIVE BORN

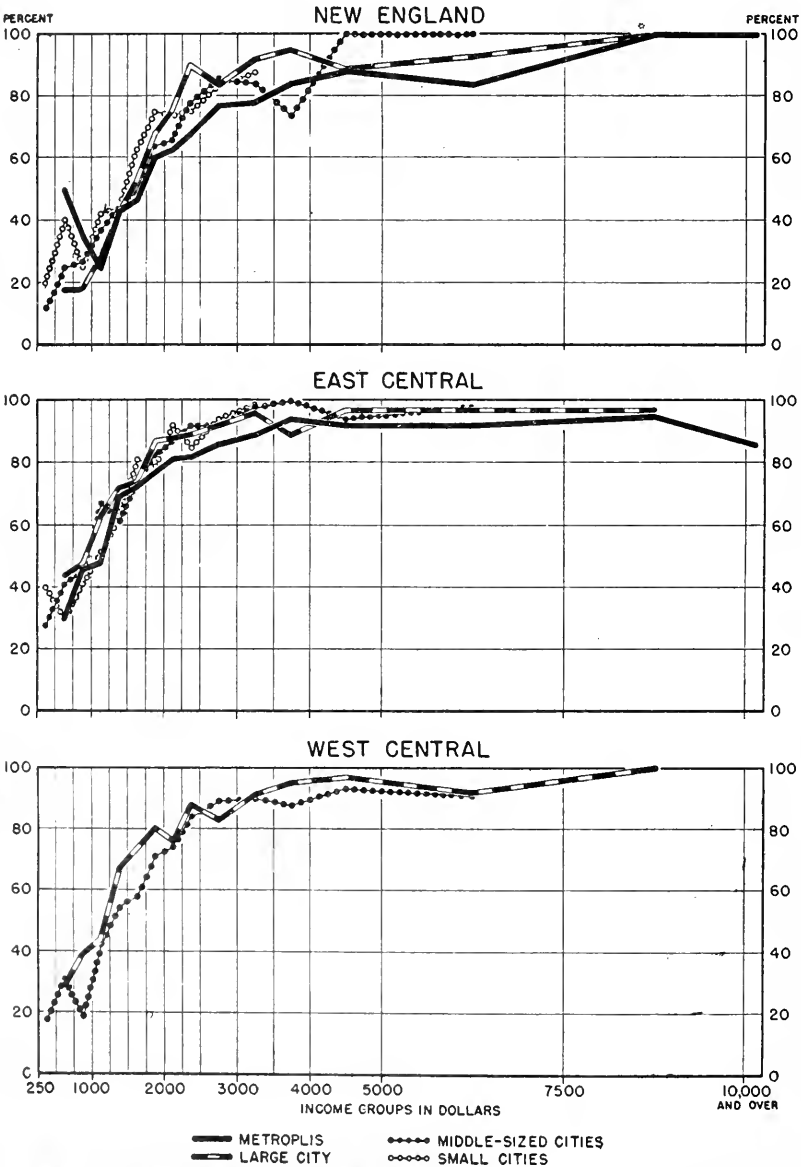


CHART XIX—Continued

HOUSEHOLD EQUIPMENT OWNERSHIP BY INCOME GROUPS

VACUUM CLEANERS

1935 - 36

NON-RELIEF FAMILIES INCLUDING HUSBAND
AND WIFE BOTH NATIVE BORN

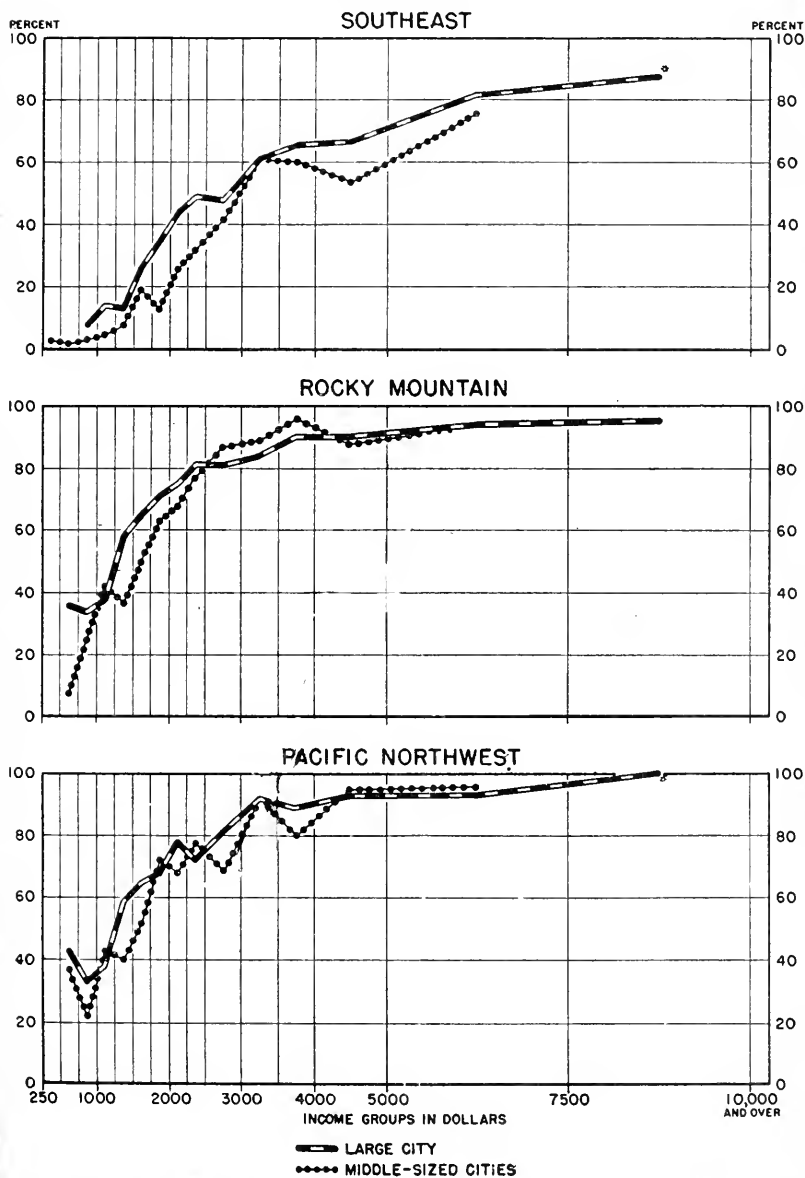
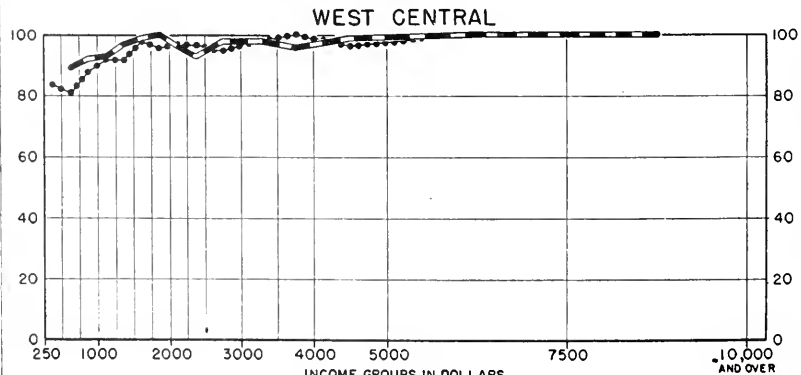
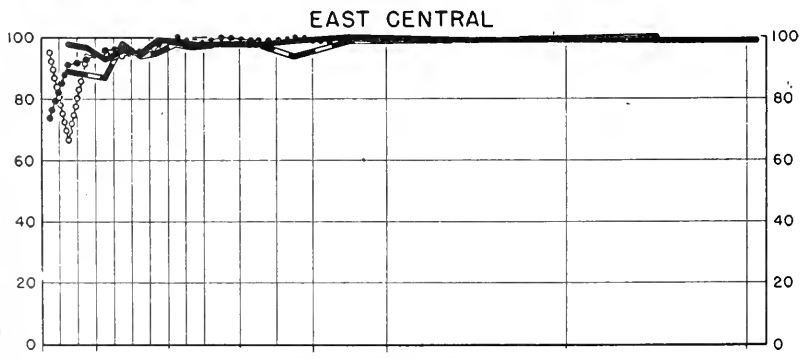
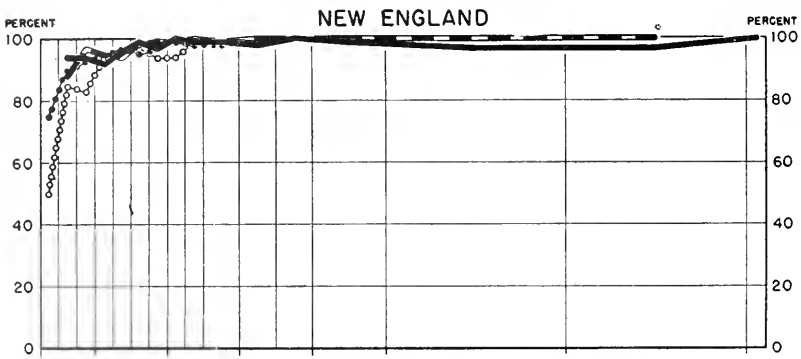


CHART XX

HOUSEHOLD EQUIPMENT OWNERSHIP BY INCOME GROUPS RADIOS 1935-36

NON-RELIEF FAMILIES INCLUDING HUSBAND
AND WIFE BOTH NATIVE BORN



— METROPOLIS ●●●● MIDDLE-SIZED CITIES
— LARGE CITIES ○○○○ SMALL CITIES

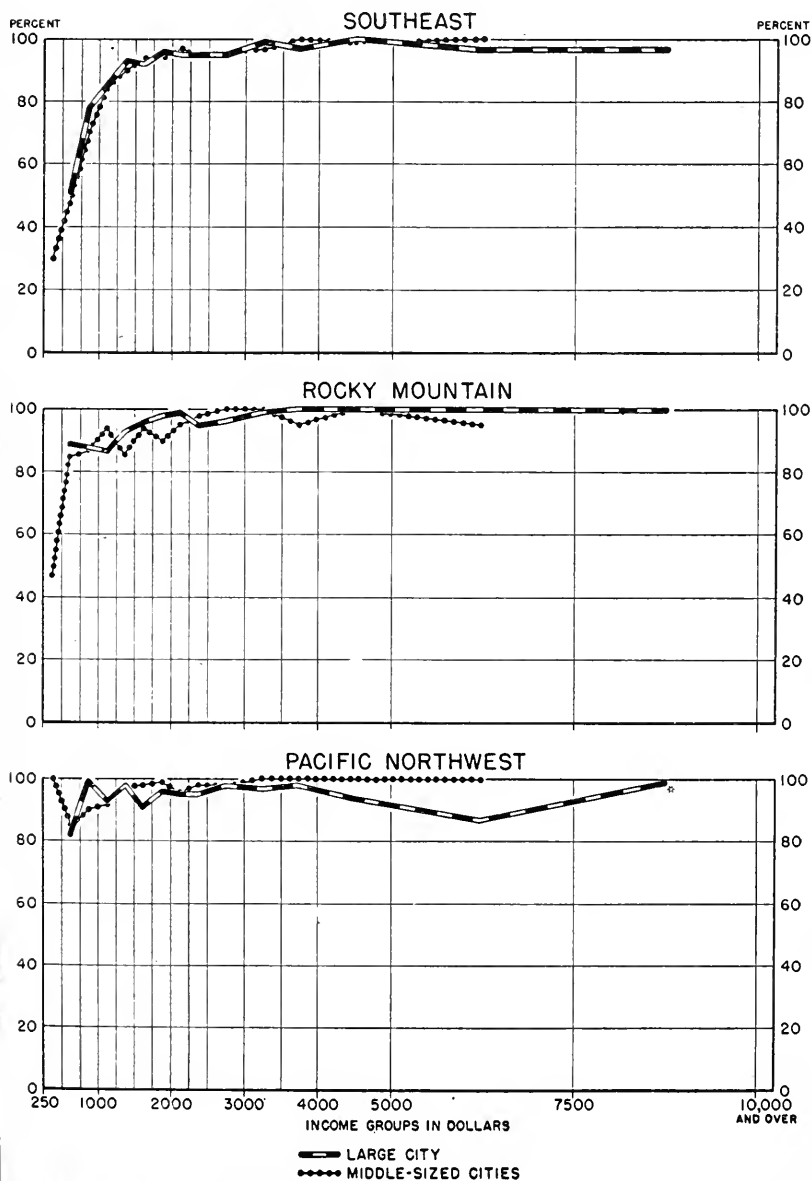
CHART XX—Continued

HOUSEHOLD EQUIPMENT OWNERSHIP BY INCOME GROUPS

RADIOS

1935-36

NON-RELIEF FAMILIES INCLUDING HUSBAND
AND WIFE BOTH NATIVE BORN



tendency for a larger share of families in upper income groups to own electrical appliances in all communities.

Expenditures by families.—During the period of general business revival in 1934–36, the Bureau of Labor Statistics conducted a study of actual expenditures for living by families of employed wage earners and clerical workers in various income groups. Among the products purchased, of course, were electric refrigerators, washing machines, vacuum cleaners, and electric stoves and hot plates. The results of this inquiry are presented for families at three economic levels—representing family incomes of approximately \$1,000, \$1,600, and \$2,100—in the following summary and in table 24.

The figures represent average expenditures per family and accordingly are small, since only a fraction of the families make such purchases (or payments on such purchases) in any one year. For example, at the \$1,000 level, only 1.1 percent of the families purchased electric refrigerators during the year, while at the \$2,100 level 12.1 percent of the families purchased such equipment.

TABLE 13.—Average expenditures by families of employed wage earners and clerical workers, by economic level

[Refer to table 24]

Item	\$1,000 income		\$1,600 income		\$2,100 income	
	Percent- age of families purchas- ing	Average expendi- ture per family ¹	Percent- age of families purchas- ing	Average expendi- ture per family ¹	Percent- age of families purchas- ing	Average expendi- ture per family ¹
Refrigerators.....	1.1	\$1.98	6.9	\$11.34	12.1	\$21.57
Washing machines.....	3.4	2.43	6.0	3.81	5.8	3.93
Vacuum cleaners.....	0	0	6.0	2.63	10.6	5.19
Ranges and hot plates.....	0	0	.6	.40	2.2	2.00

¹ Average for families in 42 large cities from unpublished data of the Bureau of Labor Statistics based on total number of families in groups, not on families purchasing.

As was to be anticipated, the upper economic level spent considerably more for electric refrigerators than did the middle group; the latter in turn spent very much more than did the lowest economic level. A similar sharp contrast in expenditures appears for vacuum cleaners and electric stoves; for washing machines, as might be inferred from its saturation pattern, the difference is less striking.

Families in the \$1,000 level spent an average of only \$1.98 for electric refrigerators, \$2.43 for washing machines and no expenditures were recorded for vacuum cleaners and electric stoves. It is apparent that these families did not participate significantly in the markets for those products. Consequently the bulk of sales was to families in the upper and middle income classes.

Income residuals.—The reasons for this greater-than-proportionate reduction in expenditures for electrical household equipment as income falls are apparent. A family can afford to purchase an expensive piece of equipment such as an electric refrigerator only if it has already met, or made provision to meet, the expenses incurred for what are commonly spoken of as the "necessities of life"—food, clothing, shelter, and personal care. Consequently, the amount of its income which a family may be able to spend for household equipment

should be measured only after the family's expenditures on these items are deducted.

In chart XXI the income which remains after deductions are made for these primary expenditures is shown as a percentage of total income.

In general, it is apparent that nonrelief⁹ families in the very low income brackets actually expend more than their total incomes, whereas those in the upper brackets have a residual of more than 40 percent. It is out of this residual that purchases of such equipment must come, as well as expenditures for such items as transportation, personal care, medical care, recreation, tobacco, drugs and cosmetics and taxes. The opportunities of purchasing such products as refrigerators, vacuum cleaners, or washing machines are correspondingly limited.

This does not mean that the lower income groups must be dropped from consideration as a potential market for these goods. However, the extent of that market should be measured not in terms of the entire income of a family, but rather in terms of that share of the total income which remains after more urgent expenditures have been made. Obviously, if these markets are to be tapped, prices must be low and payments must be extended over substantial periods of time.

COMPETITION AND SALES STRATEGY

The expansion of certain household-equipment industries since 1929 has been very marked. Sales of refrigerators, vacuum cleaners, and ranges more than trebled, and sales of washing machines and radios more than doubled during the period 1932-37. In each industry, the 1936-37 peak was far in excess of pre-depression levels.

The virgin markets available to these new industries were, of course, a primary, basic factor in their rapid development. Sales were stimulated by (1) price reductions, (2) improved equipment, quality and appearance, (3) modern merchandising methods, and (4) general business recovery.

Price uniformity.—During the downswing of the cycle from 1929 to 1932, the focus of sales effort seems to have been on prices. The reduction in average unit retail value for all these products during this period has been described. (See p. 112.) Price competition seems to have been particularly active during the most acute phase of the depression. The refrigerator industry experienced a severe price war during 1931-32; during its course some boxes were sold slightly under \$100 retail.

From 1932 on, less attention was given to price and more stress was placed upon the development of efficient, modern-styled equipment. Prices were fairly uniform and, in general, price competition was not emphasized.

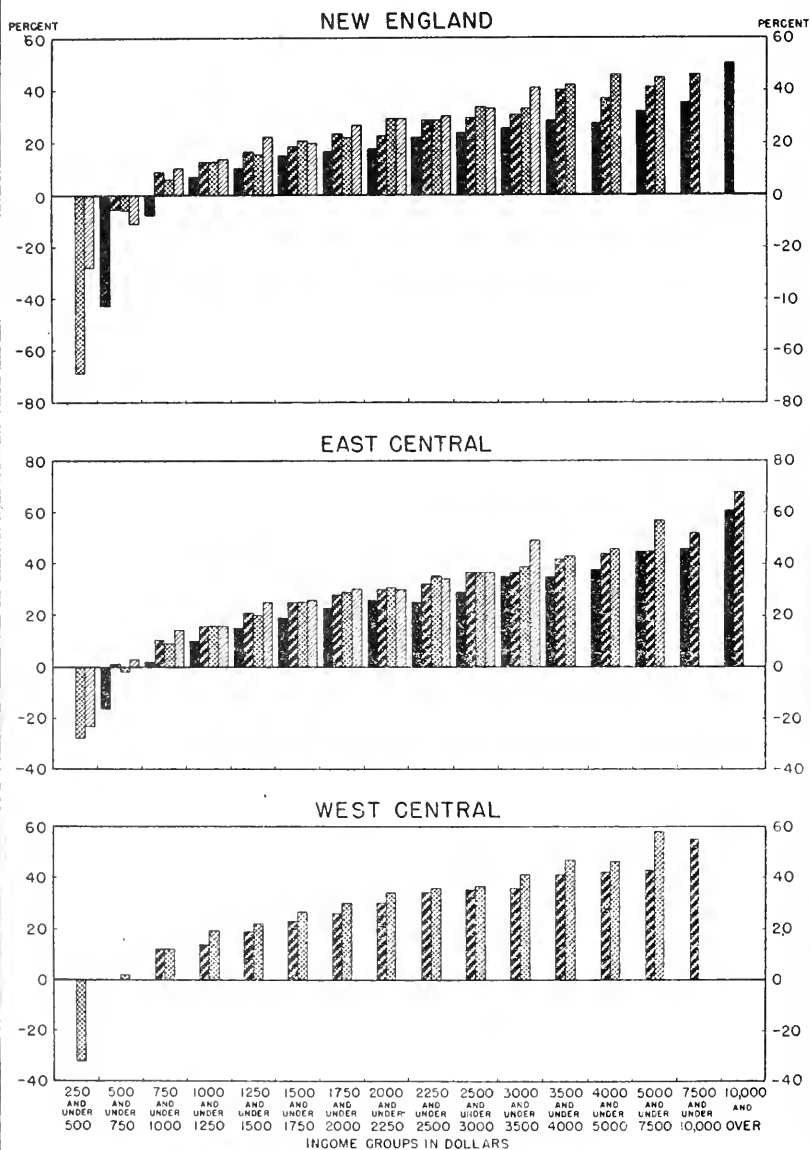
This type of situation became increasingly characteristic of the industries as the years passed. By 1938 prices quoted by the leading electric-refrigerator manufacturers, with one important exception, had approached a degree of almost complete uniformity, as is shown in table 21. Altogether, the concerns listed in the table control at least 80 percent of the total sales of electric refrigerators. The one im-

⁹ Many of the families in metropolitan areas and large cities with annual incomes under \$500 which maintained themselves without relief were those with resources to draw on either in the form of past savings or credit.

CHART XXI

INCOME RESIDUALS AFTER PRIMARY EXPENDITURES BY INCOME GROUPS 1935 - 36

NON-RELIEF FAMILIES INCLUDING HUSBAND
AND WIFE BOTH NATIVE BORN

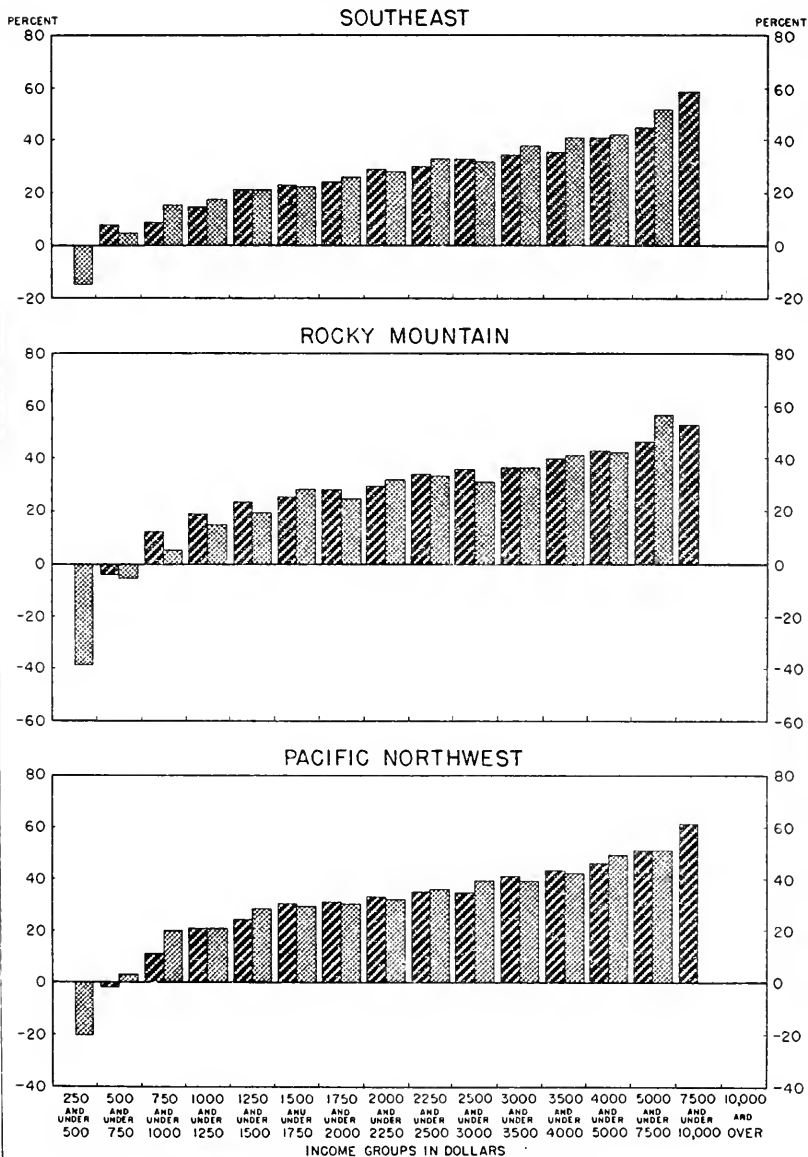


METROPOLIS MIDDLE-SIZED CITIES
 LARGE CITY SMALL CITIES

CHART XXI—Continued

INCOME RESIDUALS AFTER PRIMARY EXPENDITURES BY INCOME GROUPS 1935-36

NON-RELIEF FAMILIES INCLUDING HUSBAND
AND WIFE BOTH NATIVE BORN



portant deviation from the pattern of price uniformity is the Coldspot refrigerator, handled through a mass distributor.

The uniformity of prices among the various companies during 1938 is quite apparent from above table. In addition to this uniformity of list prices, guarantees were generally uniform, consisting in most cases of a one-year guarantee on cabinet shelves, trays, and accessories, a one-year guarantee on controls, and a 5-year "replacement" or "protection" plan on the refrigerator system itself. In the case of all the companies listed, except Stewart-Warner, these guarantee features are included in the list price; if the price quotation for this company is corrected by adding the charge for the guarantee, the price uniformity becomes even more striking.¹⁰ During 1939 this price uniformity continued; the important change which occurred early in 1940 will be discussed subsequently.

Prices in the washing-machine and vacuum-cleaner industries are also uniform. In both of these industries the influence of "price lines" is predominant. Most vacuum cleaners and washing machines sell at either \$29.95, \$39.95, \$49.95, or \$59.95. In the case of washing machines the size of the machine offered at each price line is much the same for each of the major companies. Thus, competition is removed from the sphere of price and size of machine to the efficiency of operation and to general quality appeal.

Concentration.—It is probable that the trend toward price uniformity in the refrigerator industry in the years following 1933 was facilitated by increasing concentration among producers. Business mortality was high during the depression. Thus the Electric Refrigerator News in May 1933, published a list of concerns which had ceased manufacturing electric refrigerators. The 250 producers in 1932 had been reduced to 75; 110 had gone out of business, 41 could not be reached by mail, and 24 had been absorbed by other manufacturers.

This high mortality undoubtedly reflected the stress of the depression generally, and, more particularly, the severe price war of 1931-32.¹¹ In addition, however, a sharp reduction in the number of concerns is often a symptom of an industry's approaching maturity and represents a more or less inevitable "weeding out" process following its developmental stage.

Table 22 reveals the degree of concentration among producers in three of these appliance industries during 1937. The output of the four largest producers in each case is expressed as a percentage of total output in the industry. Concentration was least marked in the washing-machine industry where four producers accounted for more than half of the total production; it was greatest in the electric-refrigerator industry where four concerns produced approximately three-fourths of the total dollar value.

In appraising the significance of this concentration, certain relationships existing between companies should not be neglected. For example, the Kelvinator Co. manufactures and distributes the Leonard refrigerator, and, in addition, has a substantial interest in the Universal Cooler Co.¹² Patents are of strategic importance,

¹⁰ The addition of a \$5 "guarantee" to the list price of the Stewart-Warner 6.0-6.9-foot model brings the net price to \$184.75 which is exactly the same price charged by Frigidaire and General Electric.

¹¹ See p. 112 above.

¹² *Standard Corporation Records*, the Kelvinator-Nash Corporation.

especially in the washing-machine industry. The Maytag Co., which produces washing machines and ironing machines exclusively, owns the basic patents on the type of mechanical agitation utilized by most washing-machine manufacturers.¹³ In the spring of 1939, however, the patent control of the Maytag Co. was materially lessened as a result of a decision by the United States Supreme Court.¹⁴ In the electric-refrigerator industry the more important patented features are freely utilized by most of the industry's members.

Emphasis upon quality.—The corporations surviving the depression—especially the large firms—invested heavily in research and experimental activities. Modern sealed units for the refrigerator were introduced by the majority of manufacturers; "streamlined" refrigerator cabinets were perfected; economic methods of insulation were devised; and great advances were made in improving the internal features of the refrigerator. Washing machines acquired many new features. The "spinner" type of machine was introduced. Table-top ranges with high-speed cooking units were developed. Throughout these industries important technological advances were achieved. New designs and new styles enhanced not only the appearance but also the utility of the appliances.

At the same time, sales effort was intensified, not only by manufacturers and dealers, but also by public utilities which sought to expand the demand for electric current. House-to-house canvassing and demonstrations of the various products became a common practice. Complete electrical kitchens were advertised and salesmen were trained to sell not merely a single item, but completely equipped kitchens for the home. Price was not emphasized during this period; the focus of competition had altered. Advertisements stressed improved quality, style, design, efficiency, and reputation.

Manufacturers sought for and developed new markets. This required new distributors and more outlets. This movement toward the extension and expansion of distributive outlets was aided by established retail stores of various kinds. Furniture stores, hardware stores, music stores, automobile accessories shops, and department stores seized the opportunity to handle these new and profitable lines. Today the largest group of outlets is electrical specialty stores (including radio stores), with department stores second, public utilities third, and furniture stores fourth.

Distribution systems vary according to product. In general, sales are through some sort of retail store, but some of the larger manufacturers of vacuum cleaners maintain large sales staffs which conduct house-to-house canvasses and sell by means of demonstration. This

¹³ *Standard Corporation Records*, the Maytag Corporation. The National Recovery Administration Code History of the washing-machine industry describes it as being of a "very compact nature" and that the industry was "not troublesome from the viewpoint of compliance. The small number of violations reported (were due to) the fact that this was a well-disciplined industry." * * * It is possible that patent arrangements played a role in this experience.

¹⁴ The Maytag Co. filed suit against several corporations for infringements of its patents. The patent, issued July 12, 1932, to the Maytag Co., assignee, contained 39 claims, 36 of which were for washing machines and 3 (Nos. 1, 38, and 39) for a method of washing fabrics. The Maytag Co. contended that the functions performed under claims 38 and 39 were distinct and separate. The Court decided otherwise. To quote the opinion delivered by Justice Roberts:

"The company insists that the crucial difference lies in the fact that in 38 the moving fluid in the tub is said substantially to suspend the fabrics, whereas in 39 the same agency is said to cause the fabrics to be freely moved about. But the difference in verbiage describes no difference in operation or result. We conclude that, when read in their entirety, they describe the same method. * * * we are of the opinion that the patent is void for failure to disclaim claim 39." (*Maytag versus Hurley Machine Company, Easy Washing Washing Machine Corporation, and General Electric Corporation*, 59 Supreme Court Reporter, October term 1938, p. 857.)

procedure seems to entail higher distribution costs and prices than the orthodox retail channel used by another major group of manufacturers.¹⁵

Prior to 1931, most manufacturers presented relatively few models and styles of each item of equipment. After business recovery began in the spring of 1933, the number of price lines was increased, affording the consumer a wider variety of choice. Instead of showing only three or four refrigerators as was the case in 1929, by 1935 the average dealer was able to present to the prospective customer 8 or 10 distinct lines. In general, at least until 1940, there has been some tendency to reduce the spreads between prices of different models.¹⁶

After 1932, when efforts to expand the market were intensified, attempts were made to introduce models which would appeal to families in the lower-income groups. For a time efforts were made to sell small 4-foot refrigerators, which were the lowest-price models, to those homes which could not afford to buy the larger, more costly equipment. During the early stages of the recovery, sales of 4-foot and smaller boxes predominated. During 1934 and 1935, however, advertising and sales effort were directed primarily toward marketing 5-foot, 6-foot, and 7-foot boxes which are more useful for the typical household. Prices were further reduced on these lines, in order to widen their appeal. This trend has continued, and at present the 6-foot box is the most popular size.

Year	Percentage distribution of sales by size of box			
	4 cubic feet	5 cubic feet	6 cubic feet	7 cubic feet
1934.....	31	21	13	11
1937.....	13	25	35	9

In other items of equipment—washing machines, ranges, cleaners—salesmen constantly warn against purchase of small, low-quality models. They have been educated to “sell quality” and to sell those models, particularly the higher-priced lines, which bring them larger commissions.

“Leader” selling has come to be a standard practice in these industries. For example, most manufacturers of refrigerators produce at least one model stripped of all the gadgets and extra features which are included in the “deluxe” styles. These models are advertised to gain the attention of bargain seekers. The “leader” models usually lack merely the eye-catching innovations, the special trays, the evaporators, and specialties of the higher-priced lines. They are available at relatively low prices and have come to represent a fairly large proportion of sales. On the other hand, prospective buyers attracted by the advertisement are often persuaded by the dealer to buy a higher-priced line instead. Similarly, in washing machines, radios, and cleaners, models stripped of gadgets and attachments are made available at relatively low prices to meet the demand of the “price conscious” segment of the market.

¹⁵ See p. 145.

¹⁶ In the case of washing machines, the various lines offered are usually priced at \$10 intervals, at 5 cents under the even figure. (E. g., \$29.95, \$39.95, \$49.95, etc.) Some manufacturers claim that this pricing technique results in the sale of more higher-priced models.

The turning point—the 1937–38 recession.—Sales had advanced at a rapid pace throughout the recovery period from 1932 to 1937; the latter year was the all-time peak in sales for all of these products.¹⁷ Production far exceeded that of 1929.

The first and second quarters of 1937 represented prosperous levels of business. Aided by modern merchandising policies, advertising, favorable terms and conditions of sale, new styles, efficiency of equipment, and general business recovery, sales came easily.

The subsequent experience of the refrigerator industry may be considered typical of the group. Manufacturers had expanded plant and equipment facilities throughout the period 1932 to 1937. As a result they were prepared to meet the high levels of demand which came during the early months of the latter year. However, encouraged by the large increase in sales during the first quarter of 1937 and by favorable reports from distributors in all parts of the country, they continued to expand plants to meet still further anticipated increases in sales. Manufacturing activity was maintained at a high rate throughout the summer of 1937, despite accumulating evidence of an impending business set-back. Heavy inventories were created during this period; production was not curtailed for some time after the rate of purchase had fallen off.

Plans were being made to modify the seasonal pattern of the industry. Showings of new models, which were usually held after the turn of the year, were scheduled for a pre-Christmas date during 1937. The industry had planned to stimulate winter sales by promoting holiday gift buying and elaborate preparations had been made accordingly. The change may have been suggested by the successful experience of the automobile industry which had altered its seasonal pattern in 1935 by changing the date of introduction of new models.

It became evident early in the summer of 1937 that the decline in sales would be much greater than normal seasonal expectation. Buying dropped off rapidly during the summer and fall. The expected increase in sales at the end of the year during the Christmas holidays did not materialize. The downward trend became even more severe during the early months of 1938. During the latter year, refrigerator sales were 46 percent below the 1937 peak level.

Inventories rose rapidly. At the end of 1937 there were 300,000 refrigerators in dealers' hands as compared with only 125,000 during December 1936.

The curtailment of public purchasing power was reflected in the failure of many conditional buyers to keep up their monthly payments. Repossessions of equipment which had been sold on time increased sharply during the winter of 1937–38. Some manufacturers have indicated their opinion that the favorable credit terms which had been offered prior to the break were at least partly responsible for this high rate of return. Presumably the impact of the recession hit with especial force marginal buyers in the lower-income levels whose purchases had been made possible in the first instance by the easy terms offered.

The large credit companies seem to have become aware of this situation somewhat belatedly. Their policy was changed during 1937, and credit facilities were generally restricted, terms of payment shortened,

¹⁷ In the case of washing machines, although dollar volume reached its peak in 1937, the number of units sold was greater in 1936.

larger down payments required, and the paying ability of prospective purchasers more carefully examined. These changes may have contributed to the contraction in sales. During 1939, however, there was evidence that the terms of conditional sales were again being made more liberal. Such liberalization is apparently characteristic of periods of active demand. Terms are usually tightened up when sales decline.

PROBLEMS OF SALES POLICY DETERMINATION

It is evident that some at least of the industries considered in the foregoing section, particularly the refrigerator, washing machine, and vacuum cleaner industries, have come to critical turning points due to the increasing saturation of a substantial portion of their original markets, particularly in the more prosperous sector of the population. The effect of this change in market conditions was forcibly revealed in the sharp declines in sales experienced by these industries during the 1937-38 recession. During 1939 there seemed abundant evidence that their initial period of rapid technological development, aggressive price reductions, and vigorous growth had apparently reached or was rapidly approaching an end.

It is clear that this change in market conditions reflecting approaching maturity must be met by corresponding changes in marketing techniques and in price policies if the expansion possibilities of these industries are to be fully realized. The policies which these industries followed between 1932-37 seem to have been well suited to the exploitation of the original market among families of the middle and upper income brackets. This market is, however, rapidly declining as evidenced by the saturation figures which have been presented. Consequently, the bulk of future sales must be either to families in income brackets who have not hitherto been able to afford the purchase of these kinds of equipment, or else they must be sales for the purpose of replacing worn out or obsolescent equipment. Maximum expansion would be achieved through appeal to both of these markets concurrently.

It is convenient to consider these two possibilities separately. Consequently, the discussion will first proceed to an examination of possibilities of expanding the original market, particularly among members of the lower income groups. The possibilities of stimulating replacement sales will be examined subsequently.

EXPANDING THE ORIGINAL SALES MARKET

Quality emphasis and advertising.—Since approximately 1932, and until 1940, programs for expanding sales in these industries (as well as competition between rival firms for their shares of the market) have focused primarily upon nonprice techniques. Prices throughout this period for all these industries and for most of the firms within each industry, with the large mail-order houses constituting a notable exception, remained stable. Sales effort concentrated partly upon advertising and sales campaigns designed to acquaint the public with the virtues of the respective appliances, and partly upon improvements of quality and appearance. Guarantees were extended to assure the consumer of the reliability and durability of the product. Im-

provements in efficiency of operation were continually sought through constant laboratory analysis and research.¹⁸

In the absence of revolutionary changes in mechanical details and construction, the future effectiveness of these techniques seems clearly limited. Although advertising will probably remain an important instrument of rivalry between competing concerns, its value in expanding the market is conditioned by the dwindling number of potential original purchasers. Moreover, there is some evidence that the ingenuity of advertising copywriters is beginning to be strained in devising new forms of appeal. Every conceivable aspect of an electric refrigerator, for example, has been exploited in advertising. Such features as the size and shape of the box, "streamlining," the "efficient" compression unit, the number of trays, the control over temperature, etc., have been described repeatedly in advertising copy.¹⁹ The exhaustion, of "sharp angles," the similarity of advertising of the various producers, and the consequent necessity of repetition lead to extremes in advertising which often mitigate its effectiveness.²⁰

The washing machine industry has not been characterized by advertising as extensive as has the electrical refrigerator industry. Instead, it relies heavily upon a system of direct sales solicitation. Manufacturers often maintain elaborate schemes for establishing prospect lists and for guiding "follow-up" work.²¹

¹⁸ The early electric refrigerators were affected by constant difficulties with motors, compressors, mechanical drives, cooling units, stuffing boxes, freezing trays, and enamel finish. Cork insulation was expensive and was only moderately successful in excluding heat. As a result of research, however, all of these difficulties were overcome. Enamels were developed which enabled the entire cabinet to be fabricated and fired as one piece. New and superior types of insulation such as wood fibre, rock wool, aluminum foil, glass wool and paper were devised. In addition a noncorrosive, nontoxic, noninflammable, nonexplosive and inexpensive refrigerant was created, dichloro-difluoro-methane or "freon." This refrigerant—which boils at 21 degrees below zero—was immeasurably superior to SO₂, ammonia, and methyl chloride. This improvement has alone contributed materially to the growth of consumer acceptance of the electric refrigerator (H. A. Toulmin, Jr., *Patents and the Public Interest*, Harper and Bros., 1939, pp. 149, 150.)

¹⁹ In the words of *Printers' Ink Monthly*, August 1937: "The selling of refrigerators requires the massing of all conceivable sales influences. It becomes evident to one who compares the methods of the leading companies that mere sharp angles will not sell refrigerators any more. As an industry matures, angles disappear and products approach uniformity. Advertising at the same time takes on a similarity."

"Probably nothing is so striking about refrigerator advertising as its similarity. Probably no one feels this more keenly than the advertisers themselves. Assuming that Joe Doakes, the common man, has an analytical mind, he doubtless compares the advertising of the leading makes with growing confusion. It is certainly impossible for him to decide from the advertising which of them is best for his purposes."

²⁰ A few examples of these extremes are as follows: "New super-duty Frigidaire with the meter-miser cuts current cost amazingly! Proves completeness never before known in all five basic services for home refrigeration."

"The new Kelvinator is plus-powered. It has as much as double the cooling capacity of other well-known refrigerators of equal size. The new Kelvinator runs only half as many minutes per day—during the rest of the time it maintains low temperatures using no current at all."

Incidentally, this latter type of extreme advertising resulted in action by the Federal Trade Commission. (Federal Trade Commission, Stipulation No. 1749, and Docket No. 3125.)

An indication that the advertising features of the product have been exhausted is revealed in the tendency of the General Electric Co., to become philosophical in its advertising:

"Life . . . " General Electric remarks, "a few fleeting measures of conscious time . . . precious . . . packed with infinite possibilities—but how to make the most of our time? It flows away so fast . . . priceless, because nothing can purchase more time than is given to us all . . ."

²¹ The Maytag Co., for example, goes to great lengths in suggesting methods for obtaining names of prospects. These consist of: Contacting regular customers who come into the store; personal solicitation of Maytag owners; field solicitation; circular letter with return card; newspaper advertising; exhibits at auto shows, fairs, carnivals, and public gatherings; cooking schools and home shows; demonstrations at church and society activities, clubs, etc.; guessing contests; drawing and registration schemes; bonus offered to Maytag owners who turn in prospects that result in sales; rough survey, the salesmen call at every fifth house; demonstrating to high-school domestic-science class; advertising second-hand washers in classified ads, some of those answering can be traded up; store and widow demonstrations; newspaper coupons, the company recommends some such offer as "This week's washing done free;" contacting newlyweds; follow birth announcements; locate washerwoman prospects by following up "washing taken in" ads in newspapers; watch "help wanted" and "situation" or "laundress wanted" ads in newspapers; newly wired homes; swapping prospects; regular charge-account customers; bookkeepers, repairmen, linemen, clerks, etc.; Maytag on truck at customer's door; getting husband's permission first to bring the machine to the home; newspaper news leads; gas inspectors, meter readers, etc.; special invitation cards to the store. (*Printers' Ink Monthly*, August 1937.)

In the vacuum-cleaner industry, as has been noted, two principal producers maintain their own salesmen and rely upon house-to-house canvassing. This necessitates the establishment and maintenance by the manufacturer of branch warehouses, district sales managers, branch managers, crew managers, and canvassers. In addition, considerable amounts are spent in the education of salesmen and in devising effective sales techniques. Companies selling through ordinary retail channels apparently find it more difficult to achieve high sales volume. It is the opinion of many in the industry that house-to-house canvassing is necessary in order to persuade the housewife that she is eliminating only part of the dirt from her home with her carpet sweeper or her old cleaner.

In each of these cases the sales techniques which have been described are somewhat expensive. Yet it seems unlikely that they will be materially modified in any particular in the near future. Although their value in increasing the total sales volume of the respective industries may be limited, particularly in view of the present degree of saturation, they nevertheless constitute effective competitive techniques. Consequently, no one company can abandon them without risking some loss of its share of the industry's sales volume. In any appraisal of the expansion prospects for each of these industries as a whole, therefore, these particular aspects of nonprice competition may be somewhat detrimental in that they impose elements of cost which must in turn be reflected in the price level.

Other forms of nonprice competition which these industries have recently utilized may not involve any material additions to cost. Nevertheless, it is doubtful whether "streamlining" of styles or the further extension of attractive guarantees can be counted upon to expand markets appreciably. In fact, as some of these techniques come to be generally utilized, they may even lose their value as competitive devices. When, for example, one or two refrigerator producers first introduced long-term guarantees, these guarantees may have had some effect in augmenting the manufacturers' respective shares of the market. Soon, however, the practice of granting long-term guarantees became general. At present these are so uniform that they are no longer a basis for distinguishing the product of one manufacturer from that of his rival. Shortly after this uniformity in guarantees was achieved, an editorial in a trade publication pointed out the consequences:

IS THE 5-YEAR GUARANTEE NECESSARY?

A recent trip into the field reveals the fact that electric dealers are highly dissatisfied with the epidemic of 5-year guarantees which seem to have broken out in the national advertising of the electric refrigerators. The point is, of course, that the advertisements are worded to give the customer the impression that the merchandise purchased is warranted against interruption of whatever character over a 5-year period, whereas that is not intended at all. The manufacturer is guaranteeing his wares only against defects for which he is responsible.

Originally the guarantee found an excuse for itself in that it was the exclusive promise of one company and so formed a sales argument for the salesmen handling that line. Now, when practically every manufacturer makes the same promise, it does not even offer a talking point against rival makes.²²

In summary there seems good reason to doubt the efficacy of these nonprice sales techniques as means of expanding the markets for

²² *Electrical Merchandising*, December 1936, p. 22.

electrical appliances, once saturation has reached a relatively high level among those who can afford to purchase at the prevailing prices. However it is possible that some future revolutionary change in mechanical detail and construction might improve the refrigerator to such an extent that the replacement market would be greatly stimulated.

Credit terms.—Before turning to the level of prices as such, it may be well to consider briefly the structure of credit terms on conditional sales. There are four basic elements to the credit transaction which may be examined as offering possibilities of stimulating sales. These are:

1. The size of the down payment.
2. The period over which payments are to be made.
3. The effective interest rate.
4. The degree of emphasis upon the purchaser's financial status.

During the period of increased demand in 1936 and 1937, efforts were made to liberalize each one of these aspects of the credit transaction. In part, at least, this reflected the activities of various Federal agencies, such as the Federal Housing Administration and the Electric Farm and Home Authority, which financed equipment sales at low interest rates. Similar practices were adopted by the industry generally and by private financing companies. Down payments were gradually reduced until, in many cases, none at all were required.

The period for payment was gradually extended from the earlier practice of 18 to 24 months; first to 30 months, and later to as long as 36 months. Interest rates were cut, particularly by public utility companies and by large department stores. Apparently too, progressively less effort was made to examine the prospective customer's financial position. It has been mentioned above (p. 137) that distress among consumers during the 1937-38 recession resulted in a large number of repossessions, part of which, at least, reflected the liberality with which credit had been extended. In an effort to avoid a recurrence of this experience, some attempts were made to tighten the credit structure. Apparently, however, the only important difference between conditions today and those preceding the recent recession is a somewhat greater surveillance of the prospective customer's financial status. Otherwise, down payments are still small or not required, interest rates low and the period of payment long.

It is true that the decision of many prospective purchasers is often governed more by the size of the required monthly payment than by the aggregate amount which they are called upon to pay. If monthly payments could be made smaller, sales might be increased. On the other hand, the interest rate charged by many sellers is now so moderate that further reductions would be unlikely to affect the size of the monthly payment appreciably, and the period over which payment is extended is probably as long as is consistent with sound financial policy. Consequently, further liberalization of credit terms does not seem to be a promising method of stimulating the market for these appliances. It is the retail price which is the basic element.

Price reductions.—The most obvious means of stimulating original sales among families in the lower income brackets is a policy of price reduction. Between 1932 and 1939, however, the prices of these

products were maintained at relatively stable levels and, except for refrigerators, these levels still prevail. While this has represented the general policy there has nevertheless been some effort, particularly in the refrigerator and washing machine industries, to introduce so-called "stripped" lines.

Since 1937 most of the major refrigerator companies have introduced special, low-priced 6-foot models. These models are "stripped" of the many special features and accessories found on the regular models. The trays do not slide out; there are no special devices for removing the ice cubes from their container and various other similar features are omitted.

Only in the 6-foot line—which retailed at about \$175 in 1939—has the new model been introduced. During 1938 and 1939 the reduction in price by most producers was approximately \$35, or to about \$140. This price was still beyond the range of many potential purchasers of limited means, but it did serve as an attractive price line for some of the lower income families.

The new line was introduced primarily as a "leader." Thus advertisements often proclaimed that a 6-foot box of a well-known producer was to be offered for sale at the "amazingly" low price of \$149.50. Customers who were attracted to the store by such an advertisement were frequently urged by the salesman to purchase one of the "de luxe" or "regular" models instead of the low-priced "leader."²³

The "leader" sales technique is also utilized in the electrical washing-machine industry. In this case the "leader" motive, while perhaps uppermost, is accompanied by an even keener awareness of the potential market for such a product among lower-income groups. Thus, washing-machine manufacturers have acknowledged indebtedness to the stimulation of their sales resulting from relief payments. Presumably, therefore, these cheap lines of washing machines have contributed materially to sales in their own right, and not merely in their capacity as "leaders."

Vacuum cleaner manufacturers have apparently made little effort to introduce similar "special" lines. Partly this may reflect the nature of the product; partly it may be due to the physical difficulty of selling more than a single line through the house-to-house canvassing system. Where price leaders have been utilized in this industry, old cleaners have been reconditioned to serve this purpose.

Despite the emphasis on the "leader" aspects of these special lines, they reflected a realization by the manufacturers of the increasing role which price consciousness among consumers is playing in the market for these electrical appliances. To the extent to which serious effort was actually devoted to selling these cheaper lines to purchasers of moderate means, they have resulted in some expansion of the potential market. The price difference was sufficient to attract certain marginal buyers that could not afford the regular models. However, this effect was probably somewhat narrowed by the practice of many salesmen in treating these models as substandard, since some con-

²³ In sales terminology this selling technique is known as the set-back method. The customer, attracted into the store by the "leader," is first shown the most expensive de-luxe models. If he indicates that the price is too high, the salesman leads him to the standard or regular models, which are still at least \$30 above the price of the model advertised. If the customer insists that he wishes to see the advertised model and cannot be interested in anything else, the salesman will finally show him this model, saying that, although it is a very good refrigerator, it cannot be compared in service and desirability to the regular models.

sumers preferred not to buy at all rather than to buy articles which were indicated to be inferior.

Much broader prospects of sales expansion than those derived from the introduction of these special models would flow from a general reduction in prices. In other words, a resumption of the price trends which prevailed between 1927 and 1932 would, if feasible, be likely to widen the potential market materially. The precise degree of expansion which might be expected to reward any particular decline in prices cannot, of course, be predicted.

The crux of the problem is contained in the phrase "if feasible." Presumably further price reductions must reflect lower costs. Broadly speaking, savings in cost may be achieved in two directions, (1) by reducing costs of manufacture, (2) by cutting the costs of distribution.

Reductions in the cost of manufacturing.—When interviewed during 1939, manufacturers in these industries did not seem to be especially sanguine as to the prospects of materially reducing manufacturing costs. In the refrigerator industry, for example, the smaller manufacturers apparently believed that important savings in manufacturing costs could be initiated only by the three or four largest companies in the industry and there was considerable doubt as to whether such savings could be possible even to this restricted group. There seemed to be some effort to explore the possibility of achieving economies by reducing the number of distinct models produced. The very marked change in the situation in this industry since the beginning of 1940 will be discussed subsequently.²⁴

Reduction of costs in the manufacture of washing machines apparently encounters certain special obstacles. Most producers in this industry are specialized, producing washing and ironing machines exclusively. The industry is largely one of machining and assemblage. Most of the manufacturers purchase a considerable portion of their materials partially or wholly fabricated.²⁵ Opportunities to lower the cost of manufacture are correspondingly limited. However, one or two very large corporations have recently entered the industry; this may result in materially reduced production costs.

In the electric-range industry, reductions in production costs may be expected to continue if the volume of the industry's sales maintains its present rate of growth. Members of the industry confidently expect that when the industry reaches a higher output basis, production costs will be materially below their present level.

Distribution costs.—The foregoing comments with regard to manufacturing costs were largely inferential, since there are few data upon which to base a more informed appraisal. Somewhat more information is available regarding costs of distribution.

In general, the distributive margin in these industries constitutes a very substantial fraction of the retail price. In the case of refrigerators, for example, the retail price during the past decade has consistently approximated slightly more than twice the manufacturer's price. In other words, between 1928 and 1937, the combined wholesale and retail mark-ups have slightly exceeded 50 percent, measured

²⁴ See p. 154 below.

²⁵ National Recovery Act Code History, Washing and Ironing Machine Manufacturing Industry, pp. 2, 3.

in terms of the consumers' list price. The spread between factory price and retail price during this period is shown below:

TABLE 14.—*Distributive margin of electric refrigerators*

Year	Average factory price ¹	Average retail price ¹	Margin		Year	Average factory price ¹	Average retail price ¹	Margin	
			Actual	Percent				Actual	Percent
	<i>Estimated</i>	<i>Estimated</i>				<i>Estimated</i>	<i>Estimated</i>		
1928.....	\$166	\$334	\$168	50	1933.....	\$83	\$170	\$87	51
1929.....	134	292	158	54	1934.....	84	172	88	51
1930.....	132	275	143	52	1935.....	78	166	88	53
1931.....	129	258	129	50	1936.....	81	164	83	51
1932.....	101	195	94	48	1937.....	85	173	88	51

¹ Source: National Electrical Manufacturers' Association.

² Source: Air Conditioning and Refrigeration News.

During 1938, the spread between factory and retail prices for the cheapest 4-foot models produced by three important manufacturers ranged between \$64.62 and \$67.80. It is apparent that a very material reduction in the retail price level could have been achieved had it been feasible to reduce this distributive margin.

Somewhat the same situation exists in the washing-machine industry. One prominent producer operates on the basis of the margins shown in the following table:

TABLE 15.—*Distributive margin of electric washing machines*

	Manufacturer's price to the jobber ¹	Suggested price to the consumer ¹	Distributive margin	Distributive margin as percent of retail price
Model A.....	\$23. 25	\$39. 95	\$16. 70	41
Model B.....	27. 25	49. 95	22. 70	46
Model C.....	33. 75	69. 95	36. 20	52

¹ Not including freight charges.

The distributive margin for the highest-priced washing machine, model C, amounted to 52 percent of the retail price, or approximately the same ratio as that shown for refrigerators. This percentage represents the actual situation in the industry more adequately than do the figures relating to the two cheaper models, since only a minority of sales fall into the lower price brackets.²⁶

²⁶ The actual distribution of sales of electric washing machines in 1938 by price classes is shown in the following table:

TABLE 16.—*Distribution of sales and average value of electric washing machines by price lines—1938*

Retail price classes	Units	Average retail price	Percent of total
Below \$40.....	88, 916	\$36. 63	9
\$40 to \$49.99.....	161, 002	48. 11	16
\$50 to \$69.99.....	450, 077	63. 22	44
\$70 and over.....	331, 358	105. 46	32
Total.....	1, 031, 353	72. 14	.....

Source: National Association of Washing Machine Manufacturers.

In the vacuum-cleaner industry distributive margins on sales through the orthodox wholesaler-retailer channel are of approximately the same order. However, the house-to-house canvassing system used by some of the leading companies is even more costly. Thus one prominent vacuum-cleaner manufacturer, selling through regular channels, was able to offer his cleaner which cost him altogether \$10.30 to produce at a retail price of \$25, less 50 percent discount to the dealer. This allowed him a profit per cleaner of only \$2.20. Thereupon, he decided to embark upon a program of house-to-house canvassing. When this system of distribution was established, he found that in order to cover the cost of canvassing, he had to raise the retail price of the cleaner to \$49.50.²⁷

A similar example is cited by O. W. Blackett:

The management of Eureka Vacuum Cleaner Co., which had average annual earnings of well over a million dollars prior to the depression, lost so heavily in 1931 that it reconsidered its whole method of retail distribution. It has used various methods of promotion, but had inaugurated a system of direct sales to consumers in 1922 which had proved so successful that by 1930, the major part of the sales volume was obtained in that way. The method was, however, very expensive since it required branches and subbranches to handle installment-sales accounting, to care for local advertising, and to carry a sufficient inventory. The decline in sales necessitated the cutting of expenses, which was accomplished by substituting dealer outlets for the company's own branches. It was possible to predict roughly the saving in expense through elimination of branch offices. The major uncertainty was how much reduction of sales volume would follow the substitution of other outlets. The management fully expected such a reduction, but hoped it would be more than balanced by the saving of expense. In this instance, the management made what for the moment, at least, was a wise decision, since the change enabled them to show a sizable profit on reduced volume in 1932. Only time will tell whether the immediate gain justified the abandonment of a system of distribution which had aided the company to increase its sales from 15.5 percent of the industry in 1921, to 27.2 percent in 1927. In very recent years the company has returned to its former policy of direct sales but to date has not regained the dominant position relinquished for the sake of immediate profits in 1932.²⁸

The one important exception to these high costs of distribution relates to products marketed through mass distributors. The following table presents a comparison of the costs of refrigerators and washing machines distributed through a mass distributor and through orthodox retailing channels.

TABLE 17.—*Distributive margins*
[Sales through mass distributors and regular channels]

Type of distribution	Retail price	Manufacturer's cost	Cost of distribution	
			Actual	Percent of retail price
Refrigerators:				
Typical standard brand sales organization.....	\$207.50	\$93.34	\$114.16	55.0
Mass distributor.....	158.00	100.00	58.00	36.7
Washers:				
Typical standard brand sales organization.....	155.00	64.00	91.00	58.7
Mass distributor.....	89.50	56.00	31.50	31.2

¹ However, the margins shown in this table for the orthodox channel of distribution are somewhat higher than those shown in tables 14 and 15 above (p. 144) for the same year. This difference may be due to the fact that this table is based upon comparatively expensive models.

Source: Compiled from Thomas, John F., Varying Functions in Distribution, Their Costs and Influences on Retail Prices, *Journal of Marketing*, July 1938, p. 56.

²⁷ Rost, Fred O., *Distribution Today*, 1933, pp. 180, 181.

²⁸ Economic Problems in a Changing World, a symposium. Edited by Willard Thorp—Farrar and Rinehart, p. 421.

These figures illustrate the possible savings which may flow from greater efficiency in the process of distribution. The distributive margin in the case of the company using direct distribution was \$58; for the refrigerator distributed through the regular channels the spread amounted to \$114.16. In the case of washing machines the distribution cost for direct distribution is \$31.50; for the product distributed through the regular channels it is \$91. There is some difference of opinion regarding the comparability of these models, but this does not affect the contrast in distributive margins.

In addition, the mass distributor sells a vacuum cleaner at \$49.50 which, according to the company, is comparable with other makes retailing at \$79.50. It is claimed that the saving is made possible by its more economical system of distribution.

At the present time, sales through mass distributors apparently constitute the most aggressive effort to reduce costs of distribution, although at least one other large producer is endeavoring to cut dealer margins. In fact, some members of these industries have expressed the opinion that distribution costs are already as low as they can be brought, and that any further reduction would result in a loss of vital sales outlets, dealer cooperation, and necessary advertising.

Members of the washing-machine industry claimed that distributive margins in the industry had not changed materially in recent years, and that their reduction could not be expected in view of the guarantee for repair parts and of the responsibilities for servicing which the dealer has assumed.

In the vacuum-cleaner industry it is said that some of the large companies which are now utilizing house-to-house canvassing are planning to distribute extensively through ordinary channels. However, unless the canvassing technique is largely abandoned, it is unlikely that any savings in cost due to the partial utilization of regular channels will be translated into lower prices to the consumer. It would be impractical for a company to charge different prices for its product when sold by a visiting salesman and by a retail store. It seems probable, therefore, that the prices charged on store sales will be maintained at the same level as those on house-to-house sales, and that that level will be largely determined by the costs of the latter system.

It is apparent, consequently, that there have been obstacles to any program of extensive price reductions in these industries, whether such reductions applied to the manufacturer's price or to the distributor's margin. During 1939 most manufacturers in these industries apparently believed that the era of price reductions had terminated and that further cuts in price would not be rewarded by a sufficient increase in volume to make the venture profitable. Thus, it has been mentioned that the smaller refrigerator manufacturers believed that only the largest members of the industry, comprising corporations which had extensive interests outside the refrigerator industry, could afford to take the risks incurred in any material change in price policy.

On the other hand, there has been increasing awareness among both manufacturers and distributors that the price element is becoming increasingly important as the market among families in the more prosperous income levels is becoming saturated. As early as the spring of 1939 one large manufacturer had become convinced of the need for lower prices. An editorial in *Electrical Merchandising*,

published in January 1937, expressed this point of view even before the sharp contraction in sales which forcibly focused attention upon the problem.

Electrical distributing trades, both wholesale and retail, may soon be forced to face the problem of justifying markets. Wholesalers and retailers have always upheld the need for more margin, although they agree over-all distribution costs are high. Now a question as to whether retailers and wholesalers are performing a service equivalent to their remuneration. Costs in 1937 are bound to increase because of rising costs of raw materials and demand for higher wages. But manufacturers are faced with the necessity of keeping prices down. A survey indicated 42 percent of refrigerator business in 1938 will come from lower-income families, a market definitely conditioned by lower prices. Yet, it is possible that appliance prices may be forced up. Profit from present market—a market distinguished from former years by higher costs and lower prices—can be in some part derived from greater production efficiency. But there is the question as to how much further manufacturing efficiency can be increased; this leaves only distribution expense to be trimmed, and manufacturers are asking if it is possible to reduce by some percent the present high cost of distribution.

Difference between manufacturing cost and selling price is high—for many appliances the cost of selling is two-thirds or more of total retail value.

Wholesalers have given much study to reducing operating costs. Chains already claim efficiency and savings to the public, but independent retailers have given little study to operating costs and possible savings * * *. Our guess is that distribution costs are in for an acute scrutiny.

The same periodical later (1938) published letters from appliance dealers which revealed their concern with the problem, and particularly with the competition offered by low-cost mass distributors:

Appliance business will be more effectively and profitably handled when—manufacturers sell direct to dealers and eliminate jobber on several lines and on other lines—such jobbers who now exist should be converted into direct-selling retail specialty companies.

From 18 to 20 percent margin is now being absorbed by distribution or those endeavoring to sell to the dealers—which amount of percentage should come to the retail distributor to use for direct sale promotion.

And—

All manufacturers keep prices up knowing dealers have to have long margin, the general public compare all standard makes with catalog houses, which is from \$10 to \$15 lower. Catalog houses get the deal and consumer does not mention his old trade-in, so I am heartily in favor of taking smaller percentage of profit, provided distributor and manufacturer will lower their profits. This, I think, is only way you can lick catalog competition. (Electrical Merchandising, The Appliance Dealer, 1938.)

Obviously this awareness of the problem must be somehow translated into a positive program for reducing prices if the market among lower income groups is to be widened appreciably. Until 1940, however, there was no concrete evidence of such a trend, except for that provided by a few mass distributory organizations. Their relatively low cost of distribution permits them to compete on a price basis. As a result, their share of the market has expanded materially. Between 1932 and 1937, sales of the lower priced equipment by mass distributors increased four times as fast as sales for the industry as a whole. It is also noteworthy that the decline experienced by mass distributors during the 1937-38 recession amounted to only one-half as much as that of the entire industry. The success achieved by these concerns merely demonstrated the efficacy of low prices as a sales argument and emphasized the need of serious attention to the problem by the concerns utilizing regular channels.

THE REPLACEMENT MARKET

Need for considering the replacement market.—The second major avenue of sales expansion for these electrical-appliance industries is the stimulation of the replacement market. For any industry producing consumers' durable goods, the replacement of worn-out or obsolescent merchandise necessarily constitutes an ever-increasing share of the market as the industry matures. In fact, it is this progressive shift from original sales to replacement sales which constitutes the basic significance of market saturation. It is obvious that the mere fact that a family already possesses a refrigerator or washing machine or a vacuum cleaner does not automatically eliminate that family from consideration as a sales prospect for a new model. On the other hand, the considerations which will determine such a family's decision to buy are in many ways different from those relating to original prospects. Consequently a program designed to stimulate replacement sales must give due weight to these differences.

Moreover, it should be emphasized that the development of the replacement market is not to be considered merely as an alternative in case it should not prove feasible to extend original sales among families in the lower income brackets. Regardless of the success of the latter course, the replacement problem will be of growing importance. The consequences of saturation may be temporarily minimized or avoided by altering price policies so as to widen the number of original prospects, but eventually they must be met notwithstanding. In other words, a shift from original to replacement sales is inherent in the very nature of consumers' durable-goods markets.

Extent of replacement sales.—The outstanding example of an industry whose market has largely shifted from an original to a replacement basis is the automobile industry. As far back as 1926, 73 per cent of all new passenger car sales were accompanied by trade-ins; that is, they involved the replacement of an older model. Since 1929 this ratio has increased further; in 1937 approximately 88 per cent of all new passenger car sales were for replacement.

In the electrical-appliance industries the ratio is not nearly so high as yet. However, it is increasing rapidly. The trend of replacement sales as a percent of all sales in the electric-refrigerator industry is shown in the table below. The data are for two leading refrigerator manufacturers; they seem sufficiently parallel to be considered indicative of the general trend in the industry.

TABLE 18.—Replacement sales as a percent of total sales of electric refrigerators

Year	Company A	Company B	Year	Company A	Company B
1929.....	3		1934.....	9	7
1930.....	2		1935.....	10	10
1931.....	3		1936.....	13	14
1932.....	1	1	1937.....	15	16
1933.....	3	2	1938.....	19	18

The ratio rose particularly sharply from 1933 to 1934. Since the latter year it has increased steadily. For the year 1938, the figures of these two companies are slightly below an estimate made by Air

Conditioning and Refrigeration News. This estimate, based upon reports of manufacturers, distributors, and dealers, indicates that about 20 percent of the United States sales of household electric refrigerators during 1938 involved the replacement of a unit previously used by the same family.²⁹

In the washing-machine industry it is estimated that the ratio of replacement to total sales is currently as high as 46.3 percent.³⁰ For vacuum cleaners, the replacement ratio is believed to be between 35 and 40 percent.

Factors influencing replacement sales.—In any program designed to stimulate replacement sales as a means of expanding the market for these products it is necessary to emphasize the specific considerations surrounding the replacement market. It has been pointed out that the factors which would induce prospective purchasers to replace used equipment are in many ways distinct from those governing the original market. These specific considerations may be conveniently grouped into three categories, (a) durability, (b) obsolescence, and (c) trade-in allowances as affecting the cost of replacement. These will be considered consecutively.

Durability.—The importance of durability is apparent. When a product is worn out so completely that it is either useless or extremely expensive to operate, its replacement can no longer be delayed. Increases in durability, such as have characterized these appliances during recent years, may to some extent be expected to retard replacement. For example, the increase in the life expectancy of the average electric refrigerator is shown in the following table:

TABLE 19.—*Estimated durability of electric refrigerators*

Year of manufacture:	Life expectancy (years) ¹	Year of manufacture:	Life expectancy (years)
1920.....	6	1930.....	13
1921.....	7	1931.....	13
1922.....	8	1932.....	13
1923.....	9	1933.....	13
1924.....	10	1934.....	14
1925.....	11	1935.....	14
1926.....	11	1936.....	14
1927.....	12	1937.....	15
1928.....	12	1938.....	15
1929.....	12		

¹ The figure for each year is an average of data compiled from a sample study which was made by a large manufacturer of refrigerators.

Similarly, there is evidence that the durability of washing machines and vacuum cleaners has been increasing. Thus, according to the Secretary of the Association of American Washing Machine Manufacturers, a modern machine will, with reasonable care, last at least 10 years. The Secretary of the Vacuum Cleaner Manufacturers Association estimates that the average life expectancy of a cleaner is approximately 12 years today, in contrast to only 6 years for a 1929 model. This trend conforms with the concept that it is not in the public interest to reduce durability in order to sell more appliances unless there is a marked decline in prices; even then it may be undesirable.

Obsolescence.—However, the importance of absolute durability

²⁹ Air Conditioning and Refrigeration News, January 1939.

³⁰ Electrical Merchandising, The Appliance Dealer, 1938.

may readily be overemphasized. Although some owners will continue to use products of this kind until their utility is entirely destroyed, the introduction of more efficient or more attractive products often results in inducing replacements long before the article in use has become completely worn out.

The persuasiveness of obsolescence in stimulating replacement varies with the nature of the product. In the automobile industry, for example, changes in style are apparently of far more importance in determining the rate of replacement than is durability as such. As far as durability is concerned, there has apparently been a distinct lengthening of actual car life during the last 10 or 15 years. Thus, studies of cars in use in 1926 and 1935 show that, whereas in the former year 50 percent of the cars survived between 6 and 7 years, in the latter year 50 percent survived about 9 years.³¹ Yet, despite this increase in durability, frequent changes in style and improvements in comfort and lower operating costs have resulted in maintaining replacements at a high rate.

Conditions with regard to obsolescence in the appliance industries are not entirely analogous to those in the automobile industry. It is doubtful, for example, that the desire to own the latest model of refrigerator can ever be quite as impelling as the wish to display the newest style of automobile. Nevertheless, according to an official of a leading refrigerator manufacturing company:

In America, Mrs. Housewife will insist on buying a new electric refrigerator a couple of years after she bought her last one, because the new refrigerators are streamlined, more efficient, or decorated in delphinium blue or have some new trick gadgets³² . . . Therefore, in all our thoughts on saturation, don't let us forget that the American public will always continue to discard their electrical devices long before they have worn out, and buy new ones provided, of course, we manufacturers can keep on changing the models and our utility and dealer friends aggressively point out the new advantages to the public.³³

Moreover, the same official suggested that the tendency of operating costs to increase after a few years of operation might constitute an added inducement to early replacement.

These considerations have their obvious limitations and there is evidence that the viewpoint expressed above is by no means unanimously held in the industry. Nevertheless, changes in style or in mechanical features will, to a limited extent, stimulate the desire for replacement. In the case of such products as washing machines and vacuum cleaners, mere changes in appearance can probably have little if any effect. Neither of these products is a display piece; their purpose is purely utilitarian. Obsolescence must, therefore, be induced by basic changes in operating features rather than in appearance. The new "all purpose" washing machine and the tank type of cleaner may represent this type of major technical improvement.

Cost of replacement—The trade-in allowance.—Assuming a desire on the part of an owner to replace obsolescent equipment, a basic consideration determining his decision is obviously the question of cost. The cost of making a replacement is dependent not only upon the price of the new product but also upon the allowance granted by the dealer for the used article. High trade-in allowances will obviously stimulate replacements—low allowances will discourage them.

³¹ The Dynamics of Automobile Demand, General Motors Corporation, New York, N. Y., 1939, pp. 47-49.

³² Some manufacturers, however, question the efficacy of this technique of inducing rapid replacement.

³³ Quoted in *Printers' Ink Monthly*, August 1937.

Probably the outstanding feature of the automobile industry's replacement policy is the highly developed character of the used car market. Trade-ins are accepted by dealers as a matter of course. On sales of new vehicles, the automobile turned in by the new car buyer is, in turn, resold and on that resale there is usually another trade-in. During 1937, trade-ins were accepted on 88 percent of new car sales and on 56 percent of used car sales.³⁴ Used car values have become well standardized. What is perhaps most important is the fact that these allowances are sufficiently high to induce most car buyers to replace their automobiles after only 2 or 3 years of use.³⁵

In general, although the acceptance of trade-ins on the sale of electrical household equipment is becoming increasingly common, the market has not yet reached the highly organized state of that existing in the automobile industry. Nor are the allowances granted usually as liberal. A comparison of the percentages of the retail list price allowed for popular priced automobiles and for refrigerators of different ages is shown in table 23.

For a 1937 automobile, the trade-in allowance was approximately 50 percent of the original price whereas for a refrigerator of the same age the allowance is only 32 percent. This same type of divergence applies to most of the older models.

In the case of washing machines it is understood that the trade-in allowance on recent models usually ranges from 25 to 35 percent of the list price. Often this allowance is fixed regardless of the type, make, or condition of the machine offered in trade.

For vacuum cleaners, the allowance is generally about 25 percent of the list price but rarely exceeds \$15 for any model.

Actual allowances on any specific sale are of course determined by the dealer. Consequently, these figures must be considered merely as approximations. They serve to show, however, that the amount which an owner of used equipment can expect to recover on a trade-in is materially smaller for these electrical appliances than is true in the case of automobiles. Since it is this allowance which determines the actual outlay required for replacement, it is apparent that the inducement offered to owners of used equipment to change for new models is correspondingly lower.

To some extent these differences between the equipment industries and the automobile industry reflect differences in distributive mark-ups. The average retail mark-up for a popular priced automobile is only 25 percent of the retail list price as compared with about 40 percent for refrigerators and washing machines. It is evident that a dealer is unlikely to grant an allowance for used equipment exceeding the cost to him for new equipment. Consequently, as soon as a refrigerator, for example, has passed from the retailer to the consumer it has suffered an immediate depreciation equivalent to at least the amount of the retail mark-up. In this way, high distributive margins not only restrict the original market by increasing the retail price; they simultaneously discourage replacements by limiting trade-in allowances.

³⁴ Automobile Facts and Figures, 1938 edition, p. 67.

³⁵ Trade-in markets have also become established in other industries. In the agricultural machinery industry, for example, a recent survey by a leading producer showed that out of a total sale of nearly 9,000 machines, by 56 dealers, trade-ins were taken on over 5,000 machines. Moreover, the bulk of the machines on which there were no trade-ins were of relatively small size, such as knife grinders, walking plows, etc. Eighty-two percent of tractor sales involve trade-ins of various kinds.

The second factor governing the character of the trade-in market is the disposition of the used models turned in. This disposition, of course, depends to a considerable extent upon the condition of the used equipment. Some of it is unfit for future use. Even in the automobile industry some of the cars received from trade must be junked, though the proportion is very low. (During 1937 less than 8 percent of all trade-ins were junked.)³⁶

In the electrical-appliance industries the ratio of junked equipment is materially higher. A survey conducted during January 1938, covering 820 independent dealers scattered throughout the Nation, showed that about one-fourth of all used refrigerators taken in trade was considered unfit for resale. In the case of washing machines the percentage was even higher. According to the same survey, 41 percent of used washers were junked.³⁷ For vacuum cleaners the ratio was also about 40 percent.

These relatively high ratios reveal, in part, the tendency of many owners of electrical household appliances to postpone their replacement until the equipment has become completely worn out. In addition, dealers in these industries are possibly not as well equipped to recondition used equipment as are automobile dealers, who usually maintain complete service stations in connection with their salesrooms.

Allowances granted on equipment whose destination is the junk yard merely constitute price concessions, indicating a willingness on the part of the retail dealer to forego part of his margin in order to make the sale. To an extent the original equipment may be over-priced in order to meet just this situation.

However, the majority of equipment accepted in trade is resold either with or without reconditioning. In the case of refrigerators, approximately 44 percent of total used equipment received is resold "as is" while 32 percent is reconditioned. In the case of washing machines 30 percent is sold as is and 29 percent reconditioned.³⁸

The amount which may be recovered by the dealer on resale of second-hand equipment is affected by the manner in which it is reconditioned. This resale price, together with the cost of reconditioning, are in turn important elements in determining the trade-in allowance which may be extended.

Facilities for reconditioning equipment—the Crosley plan.—It has been pointed out that many electrical-equipment dealers, in contrast to automobile dealers, do not possess the service facilities needed for efficient and economical reconditioning. Recently, however, several efforts have been made to remedy this deficiency.

For example, an experimental policy was recently adopted by the Crosley Co. This policy covers nine models, seven of 1937 and two of 1938. A list of national trade-in allowances has been established for these nine models. Dealers receiving Crosley refrigerators on trade-ins may have the units reconditioned in the service department for two-thirds of the price registered in the standard trade-in schedule. Refrigerators other than Crosley may be reconditioned by an organization known as the General Refrigerator Sales & Service Co. for a flat fee of \$20, or may be sold to this organization for one-half of the listed trade-in price. A 90-day warranty is offered with the rebuilt

³⁶ Automobile Facts and Figures, 1938 edition, p. 67.

³⁷ Electrical Merchandising, The Appliance Dealer, 1938.

³⁸ Ibid.

units, but only "reasonably operative" boxes will be accepted for reconditioning. One-half of the pick-up cost of the old refrigerator will be borne by the Crosley distributing company and the other by the dealer. The national trade-in allowances as announced under the plan range from approximately one-sixth to one-fourth of the list price of the various models.³⁹

The Philadelphia plan.—In Philadelphia an independent company known as the Associated Refrigerator Plant, Inc., has been organized. This organization is equipped to recondition 300 used refrigerators a week and is said to be the only plant in the United States offering reconditioning service on such a scale. Under its agreement with dealers, the plant will recondition all types of refrigerators in one-door models up to 10 cubic feet at a flat price of \$20. This fee includes free service on the units for a period of 90 days from the time they are installed for new users. Where the dealer does not desire to have the traded-in refrigerator reconditioned for resale, the company will purchase the refrigerator from him for one-half the listed trade-in price. In this way, the firm points out, dealers who trade for used refrigerators may either have them reconditioned at a flat rate for resale, or may dispose of them directly to the firm itself.

Reconditioning exchange system in vacuum cleaners.—Large vacuum cleaner manufacturers have an interchange agreement on replaced equipment. Instead of attempting to recondition machines of another make, each manufacturer exchanges the trade-ins to the original manufacturer where the reconditioning is done. In addition, there are quite a number of small concerns known to the industry as "fly by night" reconditioners. These companies purchase old cleaners at very low prices, recondition them—often it is said inadequately—and then resell them.

Summary.—Regardless of whether these specific efforts are successful, they are significant of the growing concern of these industries with the replacement market. They are also important as demonstrating the probability that some steps can be taken to handle the trade-in problem more effectively than has been the rule in the past.

Moreover, the very fact that the major fraction of the used equipment received in trade can be resold with or without reconditioning is evidence of the possibility of expanding the replacement market. It is apparent that many owners of these kinds of equipment will not continue to use them until they are completely worn out before contemplating replacement. Obsolescence is a factor which must be considered.

Any program designed to expand the replacement market materially must be basically concerned with the question of allowances. The less expensive it becomes to exchange equipment for new models, the more rapid will such turnover be, and the larger the potential scope of the market. In turn, the used equipment which is received in trade can be reconditioned and resold to families of lower-income brackets who cannot afford to pay the prices demanded for new equipment. This does not mean that there is any probability that the rate of replacement for electrical household appliances can be made to approach that of automobiles. Nevertheless, it does seem that it can be stimulated materially beyond the present rate.

³⁹ Air Conditioning and Refrigeration News, October 26, 1938, vol. 25, No. 8.

CURRENT TRENDS IN THE ELECTRICAL-REFRIGERATOR INDUSTRY

During the early months of 1940 a major change in price structure occurred in the electrical-refrigerator industry. In the second week of January the Nash-Kelvinator Corporation presented its 1940 models at prices which were substantially lower than its 1939 quotations. In the announcement accompanying these reductions major prominence was given to a 6-foot stripped model offered at a retail price of \$119.95 delivered east of the Rocky Mountains. This was the lowest price ever quoted for a comparable model by any leading manufacturer utilizing the traditional wholesaler-retailer system of distribution. It was well below the \$129-\$134 level which the other leading companies had earlier announced for competing lines. Moreover, the new price was not far above that quoted by large mail-order companies for their 6-foot stripped models.

This action by the Nash-Kelvinator Corporation precipitated a wave of similar reductions by its competitors. General Motors, General Electric, and Westinghouse, among the larger companies, all offered comparable 6-foot stripped models at a consumer's list price of \$114.75 delivered in the zone nearest their respective plants. In each case this involved substantial reductions below the prices which had been previously announced for 1940.

Companies which had been selling at levels below those of the "Big Five" also lowered their prices. The Crosley Corporation reduced the price of its 6-foot stripped model and also cut the prices of its other models. Sears, Roebuck offered its stripped 6-foot model at \$89.95 and reduced the price of its de luxe 6-foot model from \$139.50 to \$129.50. To meet these new reductions Nash-Kelvinator, in turn, announced another 6-foot stripped model for \$114.75. Some of the other leading companies thereupon cut prices further to \$112.75.

Other changes in price structure were made simultaneously. For example, the Nash-Kelvinator Corporation discarded its former zone system and is now selling refrigerators on a delivered basis anywhere east of the Rocky Mountains. The Norge division of the Norge-Warner Corporation is offering an all-porcelain refrigerator at \$159.95, a figure which is said to be considerably below that of any other all-porcelain model. The Philco Corporation is presenting a 7-foot refrigerator retailing at \$119.95, instead of the usual 6-foot model.

In order to reduce costs to correspond with these new prices, economies were sought in both manufacturing and distribution. One method utilized has been a reduction in the number of different sizes of box produced. Thus, the Nash-Kelvinator Corporation has concentrated its 1940 production on 6- and 8-cubic-foot models, a policy which, according to its officials, has resulted in important savings in costs.

At the same time, this company eliminated many of its dealer outlets in an effort to cut the costs of distribution. Although dealers' margins remained unchanged in terms of percentage, the lower price level involved a corresponding reduction in the actual dollar margin on each unit sold.

For most companies the widest price reductions have been for the stripped 6-foot model (now generally retailing between \$112.75 and

\$114.75). On other 5- and 6-foot models the reduction from the 1939 price is considerably narrower. This is indicated in table 20, which compares 1939 and 1940 prices for a number of leading companies.

TABLE 20.—Retail published list prices of electrical refrigerators, 1939 and 1940 (delivered, Washington, D. C.)

NORGE

1939			1940		
Model	Cubic feet	Price	Model	Cubic feet	Price
G3.....	3. 25	\$119. 95	VR3S.....	3. 25	\$119. 95
G4.....	4. 22	146. 95	VR3.....	3. 33	119. 95
G5.....	5. 19	172. 95	VR4.....	4. 22	144. 95
N5.....	5. 25	194. 95	DR5.....	5. 62	197. 50
S5.....	5. 07	219. 95	SR5.....	5. 62	219. 95
Sp c. 6.....	6. 11	149. 95	UR6.....		159. 95
G6.....	6. 11	189. 95	MR6.....	6. 75	189. 95
M6.....	6. 18	219. 95	DR6.....	6. 65	219. 95
S6.....	6. 07	249. 95	SR6.....	6. 65	244. 95
M8.....	8. 25	259. 95	DR8.....	8. 75	249. 95
S8.....	8. 08	299. 95	SR8.....	8. 75	279. 95

WESTINGHOUSE

U3.....	2. 90	\$119. 50	U3.....	2. 90	\$119. 75
H3.....	3. 25	119. 50			
H4.....	4. 25	146. 00			
H5.....	5. 25	171. 50	H5.....	5. 25	169. 75
H6.....	6. 25	190. 00	H6.....	6. 25	179. 75
A5.....	5. 25	192. 50	A5.....	5. 25	189. 75
A6.....	6. 25	217. 00	A6.....	6. 25	204. 75
A8.....	8. 25	254. 00	A8.....	8. 25	254. 00
A135.....	13. 50	419. 50	A135.....	13. 50	419. 50
A200.....	20. 10	489. 50	A200.....	20. 10	489. 50
E5.....	5. 25	213. 50			
E6.....	6. 25	242. 00	E6.....	6. 25	234. 50
E8.....	8. 25	280. 00	E8.....	8. 25	279. 50
E135.....	13. 50	469. 50	E135.....	13. 50	469. 50
E200.....	20. 10	549. 50	E200.....	20. 10	549. 50
			S3.....	3. 25	119. 75
			S4.....	4. 25	129. 75
S6.....	6. 20	159. 50	LS6.....	6. 20	114. 75
			S6.....	6. 20	139. 75
			S8.....	8. 25	179. 75
			D6.....	6. 25	224. 75
			D8.....	8. 25	264. 75
WF25.....	22. 70	440. 00			
A2525R.....	24. 80	695. 00			
A4025R.....	39. 80	785. 00			

KELVINATOR

KS3.....	3. 25	\$119. 50			
KS4.....	4. 20	144. 50			
K4.....	4. 20	159. 50			
KS5.....	5. 30	169. 50			
K5.....	5. 20	187. 50			
PK5.....	5. 20	209. 50			
Spec. 6.....	6. 20	149. 50	SS6.....	6. 25	\$119. 95
KS6.....	6. 20	187. 50	S6.....	6. 25	139. 95
K6.....	6. 20	212. 50	HS6.....	6. 00	169. 95
PK6.....	6. 20	237. 50	R6.....	6. 25	179. 95
			HD6.....	6. 10	209. 95
K8.....	8. 24	254. 50	S8.....	8. 20	189. 95
PK8.....	8. 24	282. 50	R8.....	8. 20	209. 95
			HD8.....	8. 00	239. 95

TABLE 20.—*Retail published list prices of electrical refrigerators, 1939 and 1940 (delivered, Washington, D. C.)—Continued*

1939			1940		
Model	Cubic feet	Price	Model	Cubic feet	Price
DA3.....	3.1	\$119.50	SV3.....	3.0	\$119.50
DA4.....	4.1	139.50	SV4.....	4.0	119.50
Master 4.....	4.1	159.50			
Master 5.....	5.1	179.50	Master 5.....	5.1	149.50
Special 5.....	5.1	159.75			
Cold Wall 5.....	5.1	214.50			
			Cold Wall Master 5.....	5.0	169.50
			De Lux.....	5.0	174.50
			SVS6.....	6.0	114.75
Super Value 6.....	6.0	149.75	Super Value 6.....	6.0	129.50
Special 6.....	6.2	179.75			
Master 6.....	6.2	204.50	Master 6.....	6.0	159.50
			De Lux 6.....	6.0	189.50
Cold Wall.....	6.2	229.50	Cold Wall Master.....	6.0	184.50
Cold Wall (porcelain).....	6.2	244.50	Cold Wall.....	6.0	214.50
			Cold Wall (porcelain).....	6.0	239.50
Master 8.....	8.2	249.50	Super Value.....	8.0	169.50
Cold Wall.....	8.0	274.50	Master 8.....	8.0	199.50
Cold Wall (porcelain).....	8.1	289.50	Cold Wall.....	8.0	254.50
			Cold Wall (porcelain).....	8.0	279.50

GENERAL ELECTRIC

JB3.....	3.2	\$119.75	JB4.....	4.0	\$129.75
JB4.....	4.0	146.50	JB5.....	5.0	169.75
JB5.....	5.0	175.00	JB6.....	6.0	179.75
JB6.....	6.0	192.00	B3.....	3.0	119.75
B5.....	5.0	191.00	B5.....	5.0	197.75
B6.....	6.0	218.00	B6.....	6.0	214.75
B8.....	8.25	260.00	B8.....	8.25	259.75
PB5.....	5.0	217.00	PB5.....	5.0	219.50
PB6.....	6.1	238.00	PB6.....	6.1	239.50
PB8.....	8.24	283.00	PB8.....	8.24	279.50
SP6.....	6.1	179.90			
			PB12.....	12.0	453.00
			PB16.....	16.0	557.00
			LB6B.....	6.0	114.75
			LB3.....	3.0	119.75
			LB6.....	6.0	139.75
			LB8.....	8.0	179.75

It is highly probable that this reduction in prices contributed materially to the sharp expansion in sales which was recorded during the early months of 1940. Sales of electric refrigerators during the first quarter of 1940 totaled 814,000 boxes, compared with 611,000 for the same period in 1939; an increase of 33 percent. According to the New York Journal of Commerce of May 10, 1940—

While manufacturers' shipments of refrigerators are not holding at the high level of the first quarter, sales to dealers for the first half of the year will show about a 30-percent rise over last.

These figures seem to illustrate clearly the possibility of expanding sales by reducing prices substantially. It is still too early, however, to determine the extent to which these price reductions represent a lasting change in industry policy, rather than a temporary price war.

One important question bearing upon the interpretation of sales policy is the extent to which manufacturers and dealers actually try to promote the sale of the stripped models upon which the major reduc-

tions have been announced, or alternatively use them as leaders and attempt to divert consumers to higher-priced models upon which the reductions have been much less drastic. There is evidence that at least some manufacturers are adopting the latter rather than the former policy. For example, according to the New York Journal of Commerce—

Favorable consumer response to the new low-priced "stripped refrigerators" caused dealers to increase orders sharply. Major manufacturers are finding it necessary to ration deliveries of these models, to discourage dealers from promoting their sale at the expense of the regular, higher-price lines.⁴⁰

The Air Conditioning and Refrigeration News on March 20, 1940, makes this significant comment:

An interesting phenomenon is the "inability" of manufacturers to make shipments of the lowest-priced boxes. Hundreds of dealers are reporting to prospects that they are temporarily "sold out" of the rock-bottom jobs. Shipments are exceedingly slow in arriving from the factories. This fact forces them to "sell up" to the higher-priced boxes.

The same trade publication on March 27, 1940, carried the following advertisement by the Nash-Kelvinator Corporation addressed to its dealers, in which the policy of selling higher-priced models wherever possible was strongly advocated:

Yes; the evidence is pouring in—and it proves the soundness of Kelvinator's 1940 program. Look at the chart showing the percentage of Kelvinator's sales by models and prices, and then compare these facts with your own sales. The evidence shows clearly that Kelvinator dealers are selling higher-priced merchandise.

Those who sell Kelvinator have more than a selling plan * * * they have a working selling plan. And it is working because it was carefully planned months ago with logical and easy-to-sell step-ups between models. There are low-priced models for the vast low-income market * * * and beautiful, full-featured models (including the new "Moist-Master" controlled humidity system) specifically designed to get the rapidly growing replacement business. Throughout Kelvinator's line of sixes and eights the salesman can step up sales because plus features in each step offer visible and provable added value to the customer.

79.8 percent of the Kelvinator volume is in refrigerators with the greatest margin, the greatest gross dollar sale. The average unit sales price is better than \$160.⁴¹

According to this advertisement, field reports received by the company up to March 19 showed that actual sales of the various models were in the following ratio:

Price	Model	Percent	Price	Model	Percent
\$114.75.....	CSX-6	6.4	\$179.95.....	S-8	7.3
\$124.95.....	SS-6	13.8	\$209.95.....	HD-6	8.1
\$139.95.....	S-6	30.3	\$209.95.....	R-8	4.1
\$169.95.....	HS-6	13.5	\$239.95.....	HD-8	4.0
\$179.95.....	R-6	12.5			

⁴⁰ New York Journal of Commerce, May 10, 1940.

⁴¹ Advertisements addressed by other manufacturers to their dealers are of the same general tenor. For example—

"DEALERS—this is the type of Norge that Mrs. America is buying, not a promotion model but a big deluxe model that carries a big, full-sized profit—the kind of profit you need and must have to stay in business.

"Of course, Norge makes low-priced models, too, spectacular promotion models and full-profit volume models, all useful in selling the whole market—and in helping you to 'sell up' into the big profit figures." (Norge advertisement, Air Conditioning and Refrigeration News, April 10, p. 17.)

"Here's the best 'step up' of the industry; 18 models. \$10 and \$20 steps—each logical and easy to sell. "Shelvadors sell at \$99.95 to \$249.95 with models designed for easy sales steps all the way up. You can instantly fit any family need and pocketbook. There's no high jump into long profit models." (Crosley advertisement, Air Conditioning and Refrigeration News, April 17, p. 3.)

The relatively low proportion which sales of the stripped model bear to total sales, according to this advertisement, is striking and suggests that dealers are cooperating fully in this "step up" program. In fact, one dealer reports proudly that he has not sold a single stripped model all season:

More refrigerator sales during the first 4 months of this year than in all of 1939, and not a "special" among them—that's the record of Roy L. Eidman, Kelvinator dealer.

Mr. Eidman has one of the \$114 models on his sales floor—the same one he started the season with. But it's never been anywhere, because Mr. Eidman and his four salesmen (two full-time, two part-time) have worked the "step-up" plan with considerable pleasure—and profit.

Most of the company's 1940 sales have been in the \$140 range, but a substantial number have been made above that class, Mr. Eidman said.

* * * * * *

Prospects can readily see the extra dollars' worth in the more expensive models, he finds, and so the process of working them up from the leader models hasn't been at all tough. In general, his sales method is to show the prospect the model he comes in and asks about—and start the selling-up tactics from that point (Air Conditioning and Refrigeration News, July 24, 1940, p. 2).

Another dealer in describing his efforts to avoid sales of the less expensive refrigerators voices a somewhat different reaction:

Manufacturers may be hearing songs of praise in many quarters for dropping refrigerator prices this year, but one dealership they'll never hear from in this vein is General Radio & Electric, Westinghouse retailer, if Clifford Biggs, one of the two owners of the place, has any say-so about it.

As far as he's concerned, about all the "specials" have accomplished is to make higher-priced models harder to sell.

"They wouldn't have had to cut the prices this year to help my business," Mr. Biggs said. "If people want good refrigeration, they're willing to pay for it. We sold plenty of high-priced models when the mail-order houses were 'way under us, and I believe we could have kept right on doing it.

"We'll work almost as hard trying not to sell a 'special' as we do in trying to sell a de luxe model. There's no money in specials, so we've kept away from them. Right now one of our best models is the \$160 job" (Air Conditioning and Refrigeration News, July 24, 1940, p. 2).

It seems obvious that the extent to which decreases in price will result in savings to the consumer and in expansion of sales may be largely determined by the popularity and acceptance of the "stripped" leader. If, however, the bulk of the sales continue to go to other models, the net savings to the consumer will be much more limited. This may also mean that the stimulation of sales will be less substantial and less lasting.

Nevertheless, it is evident that refrigerator manufacturers are in the process of recasting their sales policies to meet changing conditions. Problems such as the relative emphasis upon the stripped model, important as they are, may well solve themselves if consumer demand for these cheaper lines proves to be sufficiently insistent. The important point is that prices, which had been stable between 1932 and 1939, are again in the process of reduction, a trend which may well result ultimately in a sustained higher level of sales.

THE ROLE OF GOVERNMENT

The solution of the market problems confronting these industries is at present being evolved by the business concerns affected—either gradually by day-to-day decisions or as a more conscious industry

policy. Directly, Government has not taken any steps to influence these decisions of business policy. In the present organization of the industry it seems evident that little could be accomplished through regulatory action. However, certain programs undertaken by Government have had important effects upon these industries and afford an illustration of the manner in which Government action can influence industrial markets.

An important factor in the market for these products has been the programs which are focused primarily on rendering electric power more widely and cheaply available. The regional program of the Tennessee Valley Authority and the work done by the Rural Electrification Administration to encourage the extension of power lines into rural areas are principal examples. By thus increasing the availability of power, these activities have created new markets and increased the number of potential users of electrical household equipment.

In addition, the Federal Government has acted directly to stimulate the sales of certain kinds of equipment to families in low-income groups. The Federal Housing Administration, for example, was authorized from June 1934 to April 1937 to insure modernization loans made by private lending institutions for the purpose of repairing, modernizing, or improving homes and other properties. Through May 1937, Federal Housing Administration had insured loans of \$2,000 and less for single and multiple family residences totaling \$392,000,000.⁴² There is no information available to indicate what proportion of such loans was for electrical household equipment. However, repossessions were high and later regulations excluded household equipment after April 1, 1936.

Another important step in the direction of market stimulation was the creation of the Electric Farm and Home Authority, which was organized to finance the retail purchase of electric household and farm appliances of various kinds. The Authority originally confined its activities to electric refrigerators, water heaters, and ranges; the list has since been increased to 19 kinds of equipment.

In its activities the Authority functions in cooperation with retail dealers and privately and publicly owned utilities. Prospective purchasers whose credit is found acceptable contract directly with the dealer for the purchase of equipment. The latter, in turn, endorses the contract of sale and receives the amount of the unpaid balance from the Electric Farm and Home Authority. The purchaser pays monthly installments to the utility which provides service, and these payments are transferred to Electric Farm and Home Authority.

When the Authority was first established, 5 years ago, its activities were confined to the States in the Tennessee Valley region. During the past three and one-half years, however, the plan has been extended to many other areas in a total of 33 States, where the rates for domestic power consumption are considered to be sufficiently low to justify the use of electrical appliances by families with restricted incomes.

Since the purpose of the Electric Farm and Home Authority was to render the use of these labor saving devices available to low-income groups, efforts were made to reduce the original price of appliances eligible for financing. When the Authority started operations, it was believed that much of the equipment on the market was too expensive

⁴² Federal Housing Administration Annual Report for Year Ending December 31, 1937.

for families which it was desired to benefit. Consequently, an effort was made to induce manufacturers to offer a cheaper product. The Authority drew up specifications for a 4-foot refrigerator designed to retail at \$79 to \$89 in the Tennessee Valley area. Later a 2-cubic foot, chest model refrigerator with a lift top was substituted to retail at the same price. At first manufacturers cooperated, generally, in this program of price reduction. However, manufacturing costs increased in the latter part of 1934 and 1935, partly due to the influence of N. R. A. code agreements. Since that period, the Authority has made no direct attempt to influence the prices of equipment. Only certain designated makes are eligible for financing, and in selecting these makes the Authority considers "such factors as the financial responsibility and reputation of the applicant, quality and design of equipment, and prices."⁴³

Through June 30, 1939, the Electric Home and Farm Authority had accepted 151,000 financing contracts.

The Rural Electrification Administration, in addition to its primary function of rendering electrical power available to the farm population, also promotes the sale of electrical appliances by assisting in the financing of water pumps and heaters.

The Rural Electrification Administration has conducted two surveys designed to measure the extent of use of electrical appliances eligible for Electric Home and Farm Authority or Rural Electrification Administration financing in Rural Electrification Administration territory. They indicate a very widespread immediate purchase of certain equipment, such as electric irons and radios, followed closely by washing machines, refrigerators, and toasters.⁴⁴

To a considerable extent the purchases reflected in these surveys represent net additions to the electrical appliance markets which might have been difficult to achieve without the aid of Government.

Ten leading appliances in each of two studies

July 1938 survey (6.0 months' service experience)		January 1938 survey (8.4 months' service experience)	
Item	Percent of families purchasing	Item	Percent of families purchasing
Hand iron.....	83	Radio.....	86
Radio.....	80	Hand iron.....	81
Washing machine.....	56	Washing machine.....	47
Refrigerator.....	30	Refrigerator.....	26
Toaster.....	25	Toaster.....	24
Vacuum cleaner.....	19	Water pump.....	17
Water pump.....	17	Vacuum cleaner.....	16
Hot plate.....	15	Hot plate.....	12
Motor, up to 1 horsepower.....	11	Motor, up to 1 horsepower.....	9
Cream separator.....	10	Poultry lighting.....	9
No appliances.....	3	No appliances.....	3

Source: Rural Electrification News, January 1939.

⁴³ Electric Farm and Home Authority, Annual Report for the Fiscal Year Ending June 30, 1938.

⁴⁴ Purchases of electrical appliances by families participating in Rural Electrification Administration programs.

CONCLUSIONS

It is clear that for some of these electrical-appliance industries at least, the early period of easy and rapid growth has reached, or is about to reach, an end. The sales policies which were well adapted to introduce these commodities to the more prosperous sectors of the population may be on the verge of outliving their usefulness. Certainly as the market for original sales among this group of consumers dwindles, it becomes imperative that these policies be seriously re-examined. Certain governmental activities designed to stimulate sales among the lower-income groups may confer limited benefits, but it seems clear that the basic solution must come from the industries themselves.

Two major fields for future expansion have been suggested. The first is the potential market among families who have not been able to afford to purchase these products at their present levels of prices. The second is the stimulation of the replacement market, by increasing the incentive and reducing the cost of exchanging old equipment for new.

In both of these fields price is of paramount concern. The question has been raised as to whether it is feasible for these industries to resume the policy of aggressive price reductions which characterized their earlier history. It has been shown, for example, that during recent years sales strategy has shifted from price appeal to nonprice channels; it has been suggested that this may have resulted in increasing rather than reducing costs and prices. Is there any prospect of reversing this trend? Is there any hope of expanding the market sufficiently by further price reductions to achieve manufacturing economies adequate to make the venture profitable?

Or has the limit of important technological advances been reached, at least as far as manufacturing economy is concerned? Undoubtedly these are questions with which the members of these industries are seriously concerned. The recent experience of the refrigerator industry suggests that there may be a very real possibility of reducing prices sufficiently to tap new markets.

A basic problem is the cost of distribution. It has been shown that this cost accounts for approximately one-half of the retail price. It constitutes an imposing obstacle both to price reductions for new equipment and to attractive allowances for used equipment offered in trade. There seems to be some evidence that this cost can be reduced through the use of mass-distribution methods. Whether similar economies can be achieved through ordinary distributive channels is an important question. Apparently some manufacturers fear that reduction in distributive margins would result in the loss of certain retail outlets. On the other hand, this might not necessarily be equivalent to a loss of sales. It is conceivable that a smaller number of outlets, operating at narrower mark-ups and consequently lower prices, with a larger volume of sales through each outlet, might provide a more efficient and more economical method of distribution than the one at present in use.

Finally, there are problems which the industries seem now to be attacking, such as the disposition and reconditioning of used models accepted in trade. Here there is little reason for doubting that important advances in technique will soon be achieved.

In short, the saturation of a substantial segment of the original markets does not necessarily mark the end of the period of expansion for these industries or for others in like position. It does, however, make imperative a searching re-examination of sales policies generally and of price policies in particular, and an appropriate revision of these policies to cope with the changing character of the market.

The importance of the industries which have been described in the foregoing pages does not lie primarily in their size nor even in the relationship which they bear to other segments of the economy. It consists rather in the fact that the problems with which they are currently confronted typify a pattern of much more general application. All industries producing consumers' durable goods must, at some stage in their individual histories, face a transition from a market composed largely of original sales to one in which replacements predominate. It may be noted in passing that the decline in the rate of population growth, which has been stressed by witnesses before the Temporary National Economic Committee,⁴⁵ aggravates the change by narrowing the possibility of original sales to the successive increments of population.

Such transitions in the character of the market are inevitable for industries of this kind. The manner in which the firms involved adjust their marketing techniques and price policies to changed conditions will largely determine the subsequent growth of these industries and the opportunities which they will offer for employment and investment.

TABLE 21.—List prices of electric refrigerators 1938, principal companies ¹

Size, cubic feet	Frigidaire	General Electric	Westinghouse	Kelvinator	Crosley	Leonard	Norge	Stewart Warner	Universal Cooler	Cold-spot
3.6 to 3.9:										
Size.....	3.1		3.2	3.16	3.16	3.14	3.12			
Model.....	D3		HDS-32	K3-38	KB5-31	L3-38	R32-8			
Price.....	\$119.50		\$119.50	\$118.95	\$117.50	\$118.95	\$117.50			
4.0 to 4.9:										
Size.....	4.1	4	4.2	4.15	4.3	4.1	4.14	4.5		4.2
Model.....	N4-38	B-4	HDS-42	K4-38	KB5-43	L4-38	R41-8	458		3804
Price.....	\$144.50	\$144.50	\$144.50	\$142.95	\$142.50	\$142.95	\$142.50	\$144.75		\$114.50
5.0 to 5.9:										
Size.....	5.1	5	5.2	5.16	5.07	5.12	5.15	5.64	5.25	
Model.....	Sp. 5-38	JB-5	HS-52	KS5-38	KB5-50	LS5-38	S62-8	550	AD-533	
Price.....	\$164.50	\$164.95	\$169.50	\$162.95	\$162.50	\$162.95	\$162.50	\$164.75	\$164.95	
6.0 to 6.9:										
Size.....	6.1	6.1	6.2	6.13	6.0	6.09	6.15	6.3	6.51	6.3
Model.....	Sp. 6-38	JB-6	HS-62	KS6-38	KB5-60	LS6-38	S62-8	770	AD-658	3816
Price.....	\$184.75	\$184.75	\$189.50	\$182.95	\$182.50	\$182.95	\$182.50	\$179.75	\$184.95	\$169.50
7.0 to 7.9:										
Size.....	7.2	7.1	7.2	7.19	7.1	7.3	7.14		7.45	
Model.....	Sp. 7-38	JB-7	HS-72	KS7-38	KB5-71	LS7-38	S71-B		AD-758	
Price.....	\$204.75	\$204.75	\$209.50	\$202.95	\$202.00	\$202.95	\$202.50		\$204.95	
8.0 to 8.9:										
Size.....	8.25	8.1					8.11			8.6
Model.....	M8-38	B-8					R81-8			3838
Price.....	\$264.50	\$264.50					\$259.50			\$179.50

¹ Prices are on lowest price comparable model in each size group.

Source: Air Conditioning and Refrigeration News, Business News Publishing Co., Mar. 9, 1938.

⁴⁵ See Temporary National Economic Committee Hearings, Part 9, pp. 3504-3506.

TABLE 22.—*Percent of concentration, 1937*

Item	Production of first four companies	Percent of total	Total production	Number of companies
ELECTRIC REFRIGERATORS, DOMESTIC				
Capacity under 6 cubic feet:				
Number.....	754, 130	69	1, 093, 026	
Value.....	\$58, 464, 364	69	\$84, 458, 077	21
Capacity 6 to under 10 cubic feet:				
Number.....	728, 660	74	991, 022	
Value.....	\$73, 739, 375	77	\$95, 985, 895	25
Capacity 10 cubic feet and over (including those not reported by size):				
Number.....	(¹)	(¹)	(¹)	
Value.....	\$2, 406, 123	77	\$3, 130, 046	14
WASHING MACHINES, HOUSEHOLD USE (INCLUDING APARTMENT SIZE)				
Number.....	717, 900	49	1, 478, 480	
Value.....	\$28, 515, 327	53	\$53, 759, 751	32
VACUUM CLEANERS, FLOOR				
Number.....	(¹)	(¹)	1, 190, 782	
Value.....	\$22, 956, 563	70	\$33, 016, 817	29

¹ Data not available.

Source: Bureau of the Census, Department of Commerce.

TABLE 23.—*Cash value on trade-ins*[Cash value as percent of list price, delivered ¹]

Year	Electric refrigerators				Automobiles	
	7-foot ²	6-foot ³	5-foot ²	4-foot ²	Coach ⁴	Coach ⁵
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
1933.....	10.0	13.8	10.3	16.5	15.1	11.7
1934.....	11.0	17.9	16.6	18.5	22.2	18.5
1935.....	21.0	22.2	21.3	24.1	30.6	29.3
1936.....	23.0	24.2	24.7	25.5	39.0	39.5
1937.....	32.0	32.4	31.6	34.8	52.6	49.8
1938.....					63.1	63.3

¹ Refrigerators: Manufacturers' suggested retail delivered price; northeast zone. Automobiles: Estimated delivered retail price, Washington, D. C.² Company A.³ Company B.⁴ Company C.⁵ Company D.

Source (Refrigerators): The National Market Index, published by the National Refrigerator Index Publishing Co., Inc. (Automobiles): Blue Book, Executives' Edition, published by the National Used Car Market Report, Inc.

TABLE 24.—Average expenditures by families of employed wage earners and clerical workers by economic level ¹

Economic level—family spending per expenditure unit per year	Average number of expendi- ture units per family	Average family income	Electric re- frigerators		Washing machines		Vacuum cleaners		Electric stoves and hot plates	
			Percentage of families purchasing	Average expenditure per family ²	Percentage of families purchasing	Average expenditure per family ²	Percentage of families purchasing	Average expenditure per family ²	Percentage of families purchasing	Average expenditure per family ²
All families.....	3.32	\$1,538	6.0	\$9.77	5.9	\$3.70	4.5	\$1.97	0.7	\$0.38
Under \$200.....	5.96	1,021	1.1	1.98	3.4	2.43	—	—	—	—
\$200 and under \$300.....	4.79	1,219	1.4	2.30	5.2	3.00	1.9	.91	.2	.04
\$300 and under \$400.....	3.84	1,352	2.9	4.90	6.3	3.74	2.5	1.03	.6	.24
\$400 and under \$500.....	3.30	1,487	6.0	9.31	6.6	4.11	4.5	2.02	.6	.29
\$500 and under \$600.....	2.94	1,606	6.9	11.34	6.0	3.81	6.0	2.63	.6	.40
\$600 and under \$700.....	2.62	1,694	8.6	13.69	5.7	3.88	5.3	2.12	1.2	.48
\$700 and under \$800.....	1.99	1,787	8.6	14.61	4.9	3.32	5.6	2.32	1.0	.51
\$800 and under \$900.....	2.27	1,868	11.1	19.95	5.2	3.04	8.5	3.88	1.8	.77
\$900 and under \$1,000.....	2.20	1,984	11.7	17.65	6.8	5.31	3.7	1.21	.6	.64
\$1,000 and under \$1,100.....	2.23	2,102	12.1	21.57	5.8	3.93	10.6	5.19	2.2	2.00
\$1,100 and under \$1,200.....	2.17	2,255	12.1	20.42	7.8	4.97	9.1	6.02	.5	.51
\$1,200 and over.....	1.94	2,395	12.9	20.13	3.9	2.67	15.1	6.62	3.1	2.39

¹ Economic level is determined by the amount spent per expenditure unit, a measure which takes into account total family expenditure and family size and composition. An explanation of the method of computing this measure was given in the Monthly Labor Review for March 1936 (pp. 558-559).

² Average for families in 42 large cities from unpublished data of the Bureau of Labor Statistics based on total number of families in group, not on families purchasing.

Source: Bureau of Labor Statistics "Study of Money Disbursements of Wage Earners and Clerical Workers."

APPENDIX I ¹

MEASURES OF PRICE FLEXIBILITY

PURPOSE

In the course of the discussion of price flexibility contained in chapter II of this report, reference was made to the various ways in which price sensitivity may be measured. (See ch. II, pp. 27-31.)

A distinction was drawn at the outset between criteria designed to measure the responsiveness of prices to the specific economic forces affecting their markets, and criteria based solely upon the observed behavior of prices. It was pointed out that, although criteria of the former kind were in some ways more significant, practical considerations made it necessary to use behavioristic measures at the present time.

It is the purpose of this appendix to present data relating to the flexibility of 784 ² individual price series included in the Bureau of Labor Statistics weighted wholesale price index, as measured by various aspects of their behavior. A total of 14 different measures is presented; 2 of these were prepared by the National Resources Committee, 11 were developed in the course of the present study, and 1 is based upon an earlier analysis by this Bureau. All of these measures were based upon the behavior of these price series subsequent to January 1926.³

The criteria presented are designed to measure three general aspects of price behavior: (1) The frequency of price change, (2) the amplitude of cyclical price movement, (3) the timing of changes in price trends.

Twelve of the criteria (A to L, inclusive) are based upon some one of these aspects alone. The two remaining criteria (M and N) are designed to measure the combined effect of frequency and amplitude of change.

In computing these measures, 169 of the individual price series reported by the Bureau were grouped into 50 composites in conformity with procedure utilized by the National Resources Committee.⁴ For example, prices are published by the Bureau of Labor Statistics for six different kinds of wheat. These six series show closely parallel movements and may therefore be satisfactorily represented by a single composite series. The purpose of using composites was to avoid

¹ Appendix I was prepared by Saul Nelson and Walter G. Kelm. Joseph W. Lethco assisted in preparing the statistical data.

² During January 1938, the index was expanded to include 813 individual series, and during January 1940, it was enlarged to 863 series, but data for the additional series are inadequate to permit their inclusion in this analysis.

³ This date marks the point at which the Bureau of Labor Statistics wholesale-price data were materially revised and many new series added. Measures of price behavior prior to 1926 are included in *The Behavior of Prices*, by Frederick C. Mills, National Bureau of Economic Research, 1927, and also in *Prices in the Trade Cycle*, by Gerhardt Tintner, Vienna, 1935.

⁴ *The Structure of the American Economy*, National Resources Committee, pt. I, June 1939, p. 186.

imputing excessive weight to the items comprising them in the calculations and correlation charts. For example, the retention of 18 individual butter series, in place of a single composite, would in effect give butter a weight 18 times greater than that for other products which were represented by single series.

The criteria of flexibility for the composites were derived from the criteria for their individual constituents. In the case of measures J, K, and L, reflecting the timing of price change, the criterion for the composite is the *median* of the measures for the series included. In all other cases the *arithmetic mean* of the criteria for the individual series was computed to obtain the corresponding measure of flexibility for the composite. In this way the tendency of composites to yield misleading measures (e. g., composites generally show a greater frequency of change than any of their components) was avoided.

These measures are presented with full awareness that there are inherent inaccuracies in the basic data for this purpose. It has been pointed out repeatedly that the Bureau of Labor Statistics wholesale-price indexes are not ideal for the measurement of price flexibility. Thus, for some commodities, price changes take forms such as rebates, concessions in terms of sale, or modifications of the nature of the commodity which are not reflected in reported price data. Allowance for some of these changes may later be made possible in the course of the Bureau's program of revision and refinement of its price series. Other difficulties, such as changes in the nature of the commodity, may prove difficult or impossible to correct. Nevertheless, in view of the current interest in the subject, it was considered desirable to present these criteria of price flexibility on the basis of the price data now available.

THE CRITERIA UTILIZED

A description of the specific criteria to be presented follows:

(1) *Criteria based upon frequency of change.*—

A. Number of monthly changes in price, 1926 to 1933. This criterion was first presented by Gardiner C. Means in *Industrial Prices and Their Relative Inflexibility*.⁵ It has been somewhat amplified and revised by the National Resources Committee and is included in the recent report of the Committee, *The Structure of the American Economy*.⁶

B. Number of monthly changes in price, January 1926 to April 1929. This criterion is designed to present a measure of frequency of price change during a period of relatively full resource utilization.

(2) *Measures based upon the amplitude of cyclical price change.*—

C. The amplitude of downswing during the 1929-33 recession, as measured by the percentage of decline from January 1929 to February 1933. The bulk of these data were presented in an earlier publication of the Bureau of Labor Statistics.⁷

D. This is a measure of the amplitude of cyclical upswing. It is based upon the percentage of increase from the depression⁸ low to the 1937 peak, computed as a percentage of the former.

⁵ S. Doc. 13, 74th Cong., 1st sess.

⁶ *The Structure of the American Economy*, National Resources Committee, June 1939, pt. I, pp. 186-204.

⁷ U. S. Department of Labor, Bureau of Labor Statistics, *The Trends of Wholesale Prices*, June 1929 to 1933 (mimeographed).

⁸ For purposes of convenience the term "depression," if not otherwise modified, will be used to denote the 1929-33 downswing.

The last two criteria described measured downswing and upswing separately. The next three (E, F, and G) combine elements of upswing and downswing. Each of these three measures is based upon a comparison of the depression low price with the average of the pre-depression and post-depression peaks. One of the purposes of this technique is to make some allowance for secular trends during the period 1929-37. For example, the prices of such commodities as rayon and electric refrigerators experienced a broad secular down-trend during most of this period. Consequently, measures based exclusively either upon the amplitude of downswing or upon the amplitude of upswing are misleading.

E. Criterion E was developed by the National Resources Committee and is included in *The Structure of the American Economy*.⁹ It is based upon the difference in index points between the 1932 annual price average and the mean of the 1929 and 1937 annual prices, expressed on the basis of 1929 equals 100.

Criteria F and G may be distinguished from E in two respects. In the first place they are based upon monthly rather than average annual data. Consequently they reflect the extreme peaks and lows somewhat better, but on the other hand they are influenced by seasonal price movements. In the second place, the difference between the depression low and the two peaks is expressed as a percentage of the average of the latter rather than on the basis of 1929 equals 100. It is considered that this procedure is somewhat better adapted to compensate for secular influences.

F. Criterion F is based upon the difference between the mean of the monthly peaks during the years 1929 and 1937, and the low month of the depression, expressed as a percentage of the former.

G. Criterion G is distinguished from F merely in that the post-depression peak month was taken during the period between January 1936 and March 1937, inclusive, instead of during the calendar year 1937. This was designed to eliminate the influence of the sharp rises in the prices of certain otherwise insensitive commodities which took place during the latter part of 1937, well after the general down trend was under way.

Criteria H and I are similar to the two just described, in that they measure the relation of the depression low to the predepression and postdepression peaks. They represent two alternative devices for minimizing seasonal influences.

H. This criterion is based upon the percentage of decrease between the average of the 1929 and 1937 annual prices and the 1932 annual average price, expressed as a percentage of the former. This use of annual averages eliminates seasonal influences. This criterion is similar to the National Resources criterion E, except that the decline is expressed as a percentage, rather than in index points.

I. Measure I is based on the percentage decline between the average of the February 1929 and February 1937 prices, and the February 1933 price, computed as a percentage of the former. The use of the the same month in each year should largely eliminate seasonal variation. The month of February was selected because prices during February 1933 were close to the depression lows and prices during February 1937 generally approximated the recovery highs.

⁹ *Op. cit.*, loc. cit.

(3) *Measures based upon timing of price change.*—J. This criterion is the month during which the predepression peak was reached, based upon the period January 1929 to December 1931. For most commodities, of course, the peak month occurred during 1929, but in some cases the downtrend started much later. Some commodities showed no decline at all during this period.

K. Measure K is the month during which the depression low was reached. The period included is from January 1932 to December 1934.

L. Criterion L consists of the month during which the postdepression peak was reached, preceding the 1937–38 downswing. Data are based upon the period January 1936 to December 1938.

(4) *Measures combining frequency and amplitude.*—Criteria M and N are designed to yield measures reflecting both frequency and amplitude of change during a period of relatively full resource utilization. Price behavior was observed during the period between January 1926 and April 1929, inclusive. For each price series, the aggregate change in price during this period, regardless of sign, was totaled.

M. Criterion M is obtained by dividing the aggregate change in price during the period January 1926 to April 1929 (computed as explained above) by the actual number of price changes displayed during that period. This yields a measure of the average number of points by which each price index changes when it does change; i. e., of change per change.

N. From the aggregate change in price during the period January 1926 to April 1929 was subtracted the net change in price between the beginning and end of this period. This procedure was designed to yield a measure of the total amount of price movement which did not result in an ultimate net change in price. It may be considered to constitute a rough approximation of the total casual and seasonal variation experienced by each series during this period.

PRESENTATION OF THE DATA

Tables 25 and 26 present the flexibility of each of the individual price series and composites as measured by each of these criteria.

In table I the actual measures themselves are shown. It will be noted that measures are omitted for some of the series for some of the criteria. The character of the data made this necessary. In some cases the available data did not cover a sufficient period of time to permit the computation of certain measures. For other items criteria A and E were not available in the tabulation of the National Resources Committee. Moreover a considerable number of commodities showed no change whatever between January 1926 and April 1929. For these commodities criterion M—average change per change—could obviously not be computed.

For the purposes of table 26 the series were ranked in ten groups, or "deciles," on the basis of each of these criteria. Group I included those commodities which displayed least flexibility as judged by the measure in question, and group X included those commodities which displayed most flexibility. As far as possible, an attempt was made to include the same number of commodities in each group, but the character of the data precluded uniformity in the process. In two

cases deciles had to be combined.¹⁰ Table 26 presents the results of this method of ranking; it shows the decile into which each series falls as judged by each of the measures used.

RELATIONSHIPS BETWEEN THE MEASURES PRESENTED

Since these criteria measure different aspects of price behavior, it is to be expected that the relative degree of flexibility exhibited by specific commodity prices will vary with the measure used. On the other hand, it was pointed out in chapter II (pp. 31-32) that underlying differences in market patterns lead to the existence of certain broad relationships between different phases of behavior; as for example between frequency of change and amplitude of cyclical movement.

In order to facilitate comparison between the various measures compiled, a series of 18 tables (tables 27 to 44 inclusive) has been prepared.¹¹ Each of these tables compares the decile ranking of all the items for which data are available for two measures of flexibility. For example, table 27 compares the percentage of decline from June 1929 to February 1933 (criterion C) with the percentage of rise from the depression low to the peak of 1927 (criterion D). Thus this table shows that, for the 65 items ranked as most insensitive under measure C, data were also available under measure D; that 31 of these 65 items were also in the most inflexible group under the latter measure, 16 in the next most rigid group (group II) five in group III, five in group IV, etc. Similarly 42 of the items which were classed as most flexible under criterion C were also in the most flexible group under criterion D.

These tables are presented in the following order:

Table 27 compares depression decline (1929-33) with recovery (1933-37).

Table 28 compares the timing of the depression downturn (1929-31) with that of the initial recovery (1932-34).

Table 29 compares the timing of the depression downturn (1929-31) with that of the 1936-38 recession.

Table 30 compares the timing of the initial recovery with that of the 1936-38 recession.

Tables 31 to 34, inclusive, compare frequency of change with amplitude of cyclical movement.

Tables 35, 36, and 37 compare frequency of change with timing of movement.

Tables 38 and 39 compare amplitude of cyclical movement with timing of movement.

Tables 40, 41, and 42 compare average change per change with frequency, amplitude of cyclical movement, and timing of movement, respectively.

Table 43 compares frequency of change with aggregate change less net change.

¹⁰ This occurred for Criteria L and N. Measure L relates to the peak month before downturn during the period January 1936 to December 1938. For 158 series, or more than two-tenths of the total, there was no downturn through December 1938; hence groups I and II were combined. Measure N relates to aggregate change less net change for the period January 1926 to April 1929. For 198 items, or about three-tenths of the total, this criterion was 0.0; hence groups I, II, and III had to be combined.

¹¹ These 18 tables present what appear to be the more significant relationships between these measures. In addition 13 other tables of the same kind (Nos. 46 to 58 inclusive) have been prepared and are appended for the convenience of those who may be interested in such comparisons.

Table 44 compares amplitude of movement with aggregate change less net change.

The relationships depicted by these tables are summarized in table 45. This table shows the extent to which decile ranking varies for each pair of criteria. For example, criteria C and D are compared in the first line of this table. Twenty-nine percent of all the items included fall into the same rank for both of these measures; 63 percent show a difference of one rank or less; 81 percent show a difference of two ranks or less; 89 percent show a difference not exceeding three ranks; none show a difference of nine ranks. (Relationships involving criteria L and N were omitted from this table because the grouping of deciles prevented the use of this technique.) Obviously a high degree of uniformity between the ranking for any pair of criteria implies a close relationship between the two aspects of flexibility measured. The relationship to be anticipated on the basis of purely chance distribution is also shown.

The significance of these comparisons is summarized below:

Depression decline compared with extent of recovery.—There is apparently a marked relationship between the extent of decline between 1929–33 and the percentage of recovery from 1933 to 1937. The percentage of items falling into the same rank under both criteria is almost three times as great as chance expectation.

Relationships between various aspects of timing.—There was some tendency for prices which declined early in 1929–31 to recover early during 1932–34. Approximately the same degree of relationship exists between the timing of the depression low (1932–34) and the recovery high (1936–38) and also between the timing of the 1929–31 peak and the recovery peak. However, these correlations are not very close. Only 16 percent of the items fall into the same rank for criteria J and K as compared with chance expectation of 10 percent. Evidently the order of price movement changes materially at successive turning points.

Frequency of change and amplitude of cyclical movement.—It was observed in the course of the general discussion of price flexibility (ch. II, pp. 31–32) that prices which change frequently show a marked tendency to move widely in response to the broad upswings and downswings of general business activity. Tables 31 to 34 present four aspects of this relationship. The closest correspondence is evidently between criteria A and F. Presumably this is due to the fact that both of these measures are affected by seasonal movements. In criteria H and I the effect of seasonal forces is largely eliminated; the former is based upon annual price averages and in the latter the same month of each year is used. Table 45 shows that the pattern of relationships between frequency of change and each of these two measures is very similar but is not as close as that existing without seasonal correction. The comparison between criteria B and I shows that the relationship between frequency and amplitude of movement is of about the same order whether frequency be based upon a period of relatively full resource utilization (measure B), or upon a longer period including a major downswing (measure A).

The Pearsonian coefficients of correlation for these comparisons have also been computed on the basis of unranked data. These are:

Correlation between A and F +0.83 (standard error is 0.013).

Correlation between A and H +0.74 (standard error is 0.018).

Correlation between A and I +0.77 (standard error is 0.013).

The correlation between frequency of change and the National Resources Committee measure of depression sensitivity (criteria A and E) is somewhat lower; the coefficient is $+0.70$. The difference in principle between the National Resources Committee criterion E and criterion H has been pointed out above (p. 167) and may explain the reason for this variation.

Frequency and timing.—Tables 35 to 37 show a distinct relationship between frequency and the timing of change. Table 45 indicates that this relationship is of approximately the same order as that between frequency and amplitude of cyclical movement. Thus for criteria A and J (frequency of change and timing of the 1929–31 downturn), 24 percent of the items show no change in rank, while for the comparison between frequency and timing of the depression low (criteria A and K) 22 percent of the items are unchanged in rank. The Pearsonian coefficient of correlation computed from the unranked data is $+0.59$ for the comparison between A and J, and $+0.49$ for the comparison between A and K. These coefficients are materially lower than those relating to the comparisons between frequency and amplitude of cyclical movement; however, this difference may be partly due to the fact that the relationship between frequency and timing seems to be curvilinear rather than linear in character.

Amplitude of cyclical movement and timing of change.—Timing of change seems to be related to amplitude of cyclical movement in approximately the same degree as it is to frequency of price change. This is shown by the pattern of tables 38 to 40, inclusive, as well as by the summary in table 45. The Pearsonian coefficient of correlation between criteria I and J (cyclical flexibility and timing of 1929–31 downturn) is $+0.58$; that for the comparison between cyclical flexibility and the timing of the depression low is $+0.54$.

Change per change compared with frequency, cyclical flexibility, and timing.—Tables 40 to 42 show that there is no apparent relationship between the amount of change per change (measure M) and other criteria of flexibility. This inference is borne out by table 45, which shows that for these three comparisons involving criterion M the distribution closely parallels chance expectation. Apparently, the amount by which a price changes when it does change is not an indicator of other aspects of its behavior.

Aggregate change less net change.—Tables 43 and 44 show a high degree of relationship between aggregate change less net change (measure N) and both frequency and amplitude of cyclical movement. Unfortunately so large a proportion of the total number of items shows an aggregate change less net change of 0.0 that it is impossible either to present a summary of these relationships in table 45 or to compute a meaningful coefficient of correlation. Nevertheless, the similarity of pattern shown by tables 43 and 44 make it probable that this kind of measure, combining as it does elements of both frequency and amplitude, may serve as a useful index of price behavior.

TABLE 25.—Flexibility of commodity prices measured by various criteria

Code ¹ No.	Commodity	Measures of flexibility ²													
		A	B	O	D	E	F	G	H	I	J	K	L	M	N
I. FARM PRODUCTS															
Grains:															
1	Barley, malting.....	95	39	44.2	384.6	55.2	73.7	73.7	47.4	73.7	329	329	329	5.1	196.4
2c	Corn ³	95	38	74.4	493.8	71.5	80.7	79.0	68.5	77.0	329	329	329	5.7	204.0
4	Oats, No. 2, white.....	95	39	64.0	241.5	52.0	70.1	70.1	54.8	68.4	329	329	329	6.2	226.2
5	Rye, No. 2.....	95	39	38.4	266.5	51.8	71.8	71.8	60.7	68.1	329	329	329	6.0	226.4
6c	Wheat ³	95	39	58.4	207.4	54.1	67.2	67.2	55.4	64.7	329	329	329	3.8	109.4
Livestock and poultry:															
12	Calves, vealers.....	94	39	54.8	150.1	44.0	65.9	65.5	51.8	47.2	729	1132	937	8.1	303.4
13c	Cows ³	94	39	70.5	198.2	48.9	70.4	69.1	54.2	60.8	729	1232	937	5.1	145.9
15c	Steers ³	95	39	66.0	207.7	45.9	67.6	65.4	43.6	59.4	729	1232	937	6.7	211.4
17c	Hogs ³	94	39	67.7	307.4	63.0	74.6	72.9	62.5	65.7	729	1232	937	5.7	213.9
19c	Sheep ³	88	38	61.3	287.9	54.6	78.9	78.9	62.6	68.4	729	1232	937	8.4	305.6
20	Lambs, western.....	94	39	57.4	146.0	46.0	64.4	63.5	52.2	57.4	729	1032	937	5.2	193.8
22c	Poultry, live ³	95	39	51.9	86.7	23.4	58.5	60.0	34.0	41.7	729	938	736	6.7	234.0
Other farm products:															
24c	Cotton, Middling ³	95	39	68.2	174.6	46.3	70.0	70.0	57.9	63.4	729	932	932	4.8	179.9
27c	Eggs, fresh ³	94	39	55.3	130.3	30.8	67.5	69.6	37.1	54.3	729	932	932	10.9	390.6
30	Eggs, New Orleans.....	94	39	55.2	174.4	28.2	70.3	72.2	34.4	58.7	729	932	932	8.4	278.0
34	Apples, Chicago.....	37	37	60.1	182.5	22.6	68.0	66.0	41.5	45.4	929	932	932	12.8	438.4
35	Apples, New York.....	95	39	50.0	82.5	22.6	57.2	54.9	30.4	48.3	729	932	932	10.8	394.0
36	Apples, Seattle.....	86	36	69.9	226.9	45.8	75.1	75.2	53.7	50.4	659	932	932	12.7	448.6
37	Lemons.....	95	39	49.2	109.6	18.0	65.7	62.8	21.3	33.9	1059	432	1127	14.0	542.2
38	Oranges.....	95	39	56.7	108.6	25.3	61.5	69.1	30.3	44.7	1059	432	937	6.2	375.6
39	Alfalfa hay.....	91	39	47.5	129.5	30.4	63.7	63.3	44.4	58.5	729	633	1232	6.2	208.4
40c	Hay ³	93	36	37.6	63.3	29.3	46.3	45.0	31.0	42.9	729	932	932	4.7	159.4
42	Hops.....	94	39	64.6	560.2	47.4	79.2	79.2	52.1	17.3	729	1232	1232	6.0	212.8
43	Milk, Chicago.....	29	12	43.0	32.8	11.4	36.4	34.5	33.1	31.2	929	932	932	4.4	46.8
44	Milk, New York.....	30	14	52.5	97.7	30.0	51.3	51.3	33.5	51.0	1232	932	932	3.7	42.2
45	Milk, San Francisco.....	13	4	27.7	47.5	19.6	37.3	36.9	21.3	21.7	1232	932	932	4.3	17.0
46	Peanuts.....	73	31	79.9	375.2	61.2	80.7	80.7	67.9	79.6	729	1232	1232	6.5	189.0
47	Alfalfa seed.....	61	29	48.0	219.9	55.2	64.9	64.3	45.8	52.5	929	1132	932	9.1	209.0
48	Clover seed.....	90	35	71.9	374.6	72.4	77.2	77.2	60.5	75.1	929	1132	932	3.6	123.8
49	Flaxseed.....	95	38	53.5	137.9	45.8	65.3	65.3	51.7	54.0	1029	732	1232	2.8	102.0
50	Timothy seed.....	83	33	55.2	166.6	34.0	62.6	63.5	37.9	51.0	929	732	932	3.7	91.6
51	Tobacco, leaf.....	95	24	46.2	208.1	68.0	63.9	63.1	61.8	50.5	829	822	1147	1.8	39.6
52	Beans, dried.....	93	58	82.6	380.0	56.6	81.8	81.8	69.1	81.8	729	932	932	6.7	166.8
53	Onions.....	94	38	80.8	232.5	3.4	82.0	81.8	4.3	78.5	729	932	932	23.3	874.0
54	Sweetpotatoes.....	78	39	51.0	229.3	44.4	73.3	73.8	57.2	37.7	929	932	932	12.1	429.2
55c	Potatoes ³	94	39	7.0	292.2	45.4	74.9	77.1	48.6	50.3	1029	932	932	10.2	262.2
58	Potatoes, Oregon.....	89	39	58.2	280.6	47.4	72.7	74.9	49.1	61.8	929	1932	932	10.8	340.0

TABLE 20.—Flexibility of commodity prices measured by various criteria—Continued

Code No.	Commodity	Measures of flexibility													
		A	B	C	D	E	F	G	H	I	J	K	L	M	N
II. FOODS—continued															
Meats:															
140	Beef, cured.....	90	35	59.7	157.0	42.5	62.7	58.6	46.6	53.3	1/2	3/4	7/8	5.6	192.4
141	Beef, fresh ¹	74	30	51.4	194.9	35.8	65.2	59.9	37.2	42.8	1/2	1/2	9/16	5.3	124.5
141c	Lamb, fresh.....	94	38	45.0	95.0	32.1	57.9	59.0	38.0	29.8	1/2	1/2	9/16	6.5	242.4
143	Mutton, fresh.....	94	38	43.8	127.5	32.2	70.6	72.8	39.2	33.6	1/2	1/2	9/16	8.8	312.6
144	Bacon.....	72	33	57.0	157.7	53.1	60.6	59.0	52.9	53.2	1/2	1/2	9/16	5.4	174.0
145	Cured pork belly, cleared.....	87	39	68.0	156.5	69.8	75.6	75.3	62.1	70.5	1/2	1/2	9/16	4.4	166.0
146	Cured pork belly, rib.....	90	38	64.0	148.1	74.1	73.4	73.4	59.6	70.1	1/2	1/2	9/16	4.4	166.4
147	Cured ham.....	90	38	64.0	148.1	74.1	73.4	73.4	59.6	70.1	1/2	1/2	9/16	3.0	105.4
148	Mess pork.....	95	39	57.5	137.1	42.8	59.5	57.9	44.6	53.7	1/2	1/2	9/16	3.1	103.4
149	Pork, fresh, comp.....	90	37	53.2	157.5	46.1	58.9	60.1	44.0	52.9	1/2	1/2	9/16	6.0	230.2
150	Pork, fresh.....	95	39	53.2	157.5	46.1	58.9	60.1	44.0	52.9	1/2	1/2	9/16	7.8	286.2
151	Poultry, dressed.....	85	36	46.1	188.2	27.4	58.7	58.1	51.8	40.2	1/2	1/2	9/16	4.7	160.4
152	Poultry, dressed, Chicago.....	93	39	54.1	152.9	57.1	66.9	59.1	32.5	40.2	1/2	1/2	9/16	4.2	146.8
153	Poultry, dressed, New York.....	93	39	52.0	87.7	26.8	60.3	60.0	32.9	41.2	1/2	1/2	9/16	4.7	160.4
Other foods:															
154	Ginger ale.....	2	1	17.5	-21.5	-1	1	9.6	19.7	19.7	1/2	1/2	9/16	2	0
155	Grape juice.....	10	0	44.6	41.7	17.6	38.0	38.0	19.7	19.7	1/2	1/2	9/16	2	0
156	Plain soda.....	4	0	7.7	0	1.6	4.1	4.1	1.7	1.7	1/2	1/2	9/16	2	0
157	Cocoa beans.....	95	39	47.8	107.1	26.4	57.5	57.5	23.8	46.4	1/2	1/2	9/16	3.3	112.6
158	Powdered cocoa.....	9	0	34.8	16.5	11.0	29.1	29.1	13.2	23.5	1/2	1/2	9/16	3.1	116.4
159	Coffee, Rio.....	94	39	49.7	75.8	26.8	61.6	61.6	34.3	39.1	1/2	1/2	9/16	2.4	87.2
160	Coffee, Santos.....	94	38	59.2	50.0	26.6	57.0	57.0	35.5	47.8	1/2	1/2	9/16	1.9	32.2
161	Copra.....	97	31	57.6	364.9	47.9	77.0	77.0	66.0	66.0	1/2	1/2	9/16	6.8	48.4
162	Canned salmon, pink.....	30	10	50.0	47.4	25.6	42.5	39.7	29.5	37.7	1/2	1/2	9/16	3.3	46.6
163	Canned salmon, red.....	58	23	47.2	78.6	25.4	48.0	46.6	27.0	40.7	1/2	1/2	9/16	3.3	62.0
164	Pickled cod.....	60	27	42.8	34.9	14.2	60.1	64.2	20.2	36.3	1/2	1/2	9/16	8.1	177.6
165	Pickled herring.....	68	27	57.3	110.0	27.6	64.9	64.9	50.4	64.0	1/2	1/2	9/16	2.6	11.9
166	Salt mackerel.....	54	24	35.5	32.1	27.6	39.8	45.7	32.9	33.7	1/2	1/2	9/16	6.3	114.8
167	Smoked salmon.....	43	14	39.1	87.4	35.4	43.8	41.4	35.3	39.1	1/2	1/2	9/16	4.4	43.6
168	Glucose.....	17	2	39.3	6.0	11.4	43.8	41.4	14.8	21.9	1/2	1/2	9/16	7.6	0
169	Grape jam.....	94	39	65.5	227.3	56.8	67.9	67.9	57.5	66.0	1/2	1/2	9/16	2.8	87.4
170	Lard.....	17	10	14.7	4.0	8.8	17.9	17.9	9.6	17.9	1/2	1/2	9/16	8.2	80.4
171	Molasses.....	17	10	14.7	4.0	8.8	17.9	17.9	9.6	17.9	1/2	1/2	9/16	4.0	44.0
172	Oleomargarine.....	40	12	65.9	95.0	38.6	63.6	63.6	44.8	68.4	1/2	1/2	9/16	4.9	177.6
173	Oil.....	74	39	50.6	163.1	55.0	58.3	58.3	51.5	54.9	1/2	1/2	9/16	7.5	34.4
174	Peanut butter.....	22	6	53.1	117.1	42.7	53.6	52.6	44.6	67.0	1/2	1/2	9/16	6.8	282.0
175	Black pepper.....	94	39	80.2	-2.6	29.8	67.9	67.9	50.7	67.0	1/2	1/2	9/16	3.0	11.2
176	Salt.....	14	4	1.3	38.8	1.6	21.0	19.4	1.4	8.0	1/2	1/2	9/16	2.2	15.2
177	Canned soup (tomato).....	17	7	14.3	18.7	7.5	15.8	15.8	7.5	14.3	1/2	1/2	9/16	2.2	11.2
178	Corn starch.....	17	0	47.4	70.2	27.1	46.4	43.9	30.5	40.1	1/2	1/2	9/16	2.6	0
179	Sugar, granulated.....	38	38	21.4	33.0	17.7	28.4	30.4	18.3	21.6	1/2	1/2	9/16	2.6	91.6

180	Sugar, raw	94	39	21.8	48.9	18.2	34.2	34.2	34.2	19.0	24.8	19.5	5.2	1.7	2.6	88.6
181	Tallow (edible)	92	39	64.9	303.8	58.2	73.7	73.7	73.7	60.0	70.7	2.9	5.2	4.3	151.6	
182	Formosa tea	22	7	46.1	72.5	35.3	46.8	46.8	46.8	37.8	42.1	2.9	5.2	2.6	11.4	
183	Coconut oil	81	32	49.3	262.3	46.9	68.5	68.5	68.5	46.3	61.8	2.9	5.2	2.5	54.6	
184	Corn oil	61	24	51.2	199.1	50.2	64.3	64.3	64.3	50.9	54.1	2.9	5.2	4.4	99.8	
185	Cottonseed oil	93	39	63.2	263.7	58.0	71.1	71.1	71.1	59.5	67.7	2.9	5.2	4.9	181.0	
186	Olive oil	37	18	42.3	92.5	33.2	45.3	45.3	45.3	38.8	43.5	2.9	5.2	6.2	98.8	
187	Peanut oil	76	28	60.6	264.3	57.8	72.1	72.1	72.1	59.1	67.9	2.9	5.2	5.9	165.4	
188	Soybean oil	65	18	63.5	180.9	55.8	66.3	66.3	66.3	61.2	63.8	19.5	12.5	3.7	13.8	
189	Cider vinegar	35	21	34.2	11.9	20.0	29.5	29.5	29.5	23.3	26.4	1.9	5.3	4.0	80.8	
III. HIDES AND LEATHER PRODUCTS																
Shoes:																
90c	Children's shoes ¹	11	5	32.8	45.8	22.5	38.0	38.0	38.0	27.2	34.4	5.9	5.3	7.3	21.9	
191	Child's shoes	9	4	31.9	32.8	2.9	31.5	31.5	31.5	23.9	28.5	2.9	5.3	8.3	7.4	
193	Youths' shoes	10	4	37.3	32.8	13.5	26.7	26.7	26.7	16.4	18.8	1.9	5.3	4.6	10.6	
94c	Men's shoes, calf ¹	16	6	16.4	38.8	19.4	22.6	22.6	22.6	18.3	18.3	1.9	5.3	3.1	9.4	
197	Shoes, dress	11	5	3.0	61.9	24.6	25.4	25.4	25.4	20.3	16.0	1.9	5.3	6.3	14.8	
201c	Shoes, men's ¹	22	9	14.8	38.3	18.6	21.1	21.1	21.1	17.5	16.8	1.9	5.3	2.7	15.6	
202c	Shoes	44	18	40.1	50.2	25.2	38.9	38.9	38.9	37.6	34.9	1.9	5.3	2.8	22.0	
205c	Women's shoes ¹	21	6	24.2	41.3	23.0	26.7	26.7	26.7	22.4	24.2	5.9	5.3	2.6	10.3	
206c	Women's shoes	12	7	10.2	19.7	12.4	13.5	13.5	13.5	12.1	12.2	5.9	5.3	2.8	13.7	
208	Oxford pumps	14	5	34.7	5.3	20.0	23.1	23.1	23.1	23.8	26.2	1.9	5.3	4.2	21.0	
Hides and skins:																
211	Cowhides	86	38	73.3	321.5	60.6	77.3	77.3	77.3	62.6	68.0	1.9	5.2	9.3	344.4	
212c	Steer hides ¹	95	39	70.6	360.6	65.6	78.4	78.4	78.4	64.5	69.4	1.9	5.2	8.5	327.7	
214	Calfskins	90	35	67.0	433.5	67.5	81.2	81.2	81.2	68.9	67.9	2.9	5.2	8.7	299.0	
215	Goatskins	77	25	45.7	140.0	42.7	58.9	58.9	58.9	43.6	49.0	5.9	5.2	3.2	70.6	
216	Kip skins	84	34	67.7	287.0	55.9	76.2	76.2	76.2	61.6	61.2	1.9	5.2	8.8	292.0	
217	Sheepskins	90	35	56.9	927.2	77.0	90.0	90.0	90.0	89.9	76.7	1.9	5.2	5.5	181.4	
Leather:																
218	Chrome leather	40.7														
219	Glazed kid leather	2	2	48.2	67.8	32.8	44.6	44.6	44.6	35.3	44.2	5.0	5.3	3.7	0	4.6
220	Harness leather	30	13	36.5	47.4	36.4	41.0	41.0	41.0	24.7	34.5	2.9	5.3	4.5	44.6	
221	Side chrome leather	49	10	46.3	86.4	35.8	52.1	52.1	52.1	39.3	47.3	1.9	5.3	9.9	86.8	
222c	Sole leather ¹	65	19	54.7	103.0	35.8	57.9	57.9	57.9	40.8	54.8	1.9	5.3	4.8	74.1	
225	Leather belting	7	2	19.0	10.9	7.4	14.7	14.7	14.7	7.8	14.7	1.9	5.3	2.4	0	
226	Men's gloves	4	0	37.5	26.7	6.3	30.2	30.2	30.2	7.0	30.2	1.9	5.3	6.7	0	
227	Women's gloves	5	1	31.3	36.4	9.4	24.1	24.1	24.1	9.7	29.1	1.9	5.3	1.8	12.2	
228	Harness	19	11	16.6	24.4	10.8	21.4	21.4	21.4	11.1	17.3	1.9	5.3	1.8	12.2	
229	Suitcases	14	6	32.0	54.7	23.8	35.0	35.0	35.0	23.5	32.8	5.9	5.3	5.9	25.2	
230	Traveling bags	14	5	32.8	52.4	24.5	34.4	34.4	34.4	24.6	31.0	1.9	5.3	2.1	9.2	
IV. TEXTILES																
Clothing:																
231	Soft collars	4	1	22.8	31.9	24.5	29.2	29.2	29.2	25.7	17.6	9.9	10.2	34.7	0	
232	Stiff collars	1	0	16.8	0	-3.6	0	0	0	+3.5	+7.2	1.9	1.9	(*)	0	
233	Men's cotton kerchiefs			42.8	84.0	44.9	44.9	44.9	44.9	39.7	44.9	5.9	5.3	5.9		
234	Women's cotton kerchiefs			35.7	68.1	40.5	40.5	40.5	40.5	39.7	44.9	5.9	5.3	5.9		
235	Men's linen kerchiefs			55.7	73.6	49.9	49.9	49.9	49.9	48.4	49.9	5.9	5.3	5.9		

See footnotes at end of table.

TABLE 25.—Flexibility of commodity prices measured by various criteria—Continued

Code No.	Commodity	Measures of flexibility													
		A	B	C	D	E	F	G	H	I	J	K	L	M	N
IV. TEXTILES—continued															
Clothing—Continued.															
236	Women's linen kerchiefs.....	9	1	54.9	62.8	45.9	48.2	46.9	23.4	36.6	340	1232	148	7.3	0
237	Hats, finished.....	11	1	43.5	—	—	—	—	—	—	250	1038	—	1.8	0
238	Hats, unfinished.....	36	15	33.3	—	—	—	—	—	—	250	533	—	2.5	37.2
239	Overalls.....	6	2	44.2	67.5	25.6	42.5	36.6	21.6	42.1	329	233	937	8.5	0
240	Overcoats.....	2	0	6.7	0	0	3.5	—	—	—	1260	733	—	(1)	0
241	Dress shirts.....	2	0	29.3	0	0	3.5	—	—	—	951	1234	1238	—	0
242	Work shirts.....	16	1	19.1	73.4	32.0	42.8	41.2	30.5	39.0	329	937	937	3.1	0
243	Boys' 4-piece suits.....	243	11	30.0	64.3	30.0	34.9	30.9	30.6	30.9	540	443	1248	(1)	0
244	Men's 3-piece suits.....	10	2	32.0	61.4	33.2	31.3	27.9	30.0	27.9	950	733	438	8.0	0
245	Men's 4-piece suits.....	3	3	32.0	85.8	38.0	42.4	41.1	35.5	38.2	329	832	1037	3.6	0
246	Youths' 4-piece suits.....	3	3	37.3	15.7	—	27.9	23.7	24.4	23.7	329	833	1248	3.6	0
247	Topcoats.....	9	2	37.0	40.4	25.0	26.1	21.5	24.3	21.4	850	733	1248	8.9	0
248	Boys' knickers.....	17	2	58.9	181.0	49.4	61.9	61.9	45.4	61.9	929	433	938	6.7	0
249	Men's dress trousers.....	20	3	38.0	66.7	31.4	39.0	37.7	31.0	36.8	1129	433	1247	3.1	0
250	Men's work trousers.....	11	5	34.9	52.1	29.0	36.2	37.0	29.7	36.2	329	933	1246	4.0	0
Cotton goods:															
251	Broadcloth.....	15	5	52.0	102.3	—	51.3	51.3	—	51.2	350	243	147	2.4	10.8
252	Denim.....	64	27	20.9	60.4	26.8	33.5	33.1	25.4	25.4	1250	433	737	3.1	80.8
253	Denim.....	64	27	54.5	90.9	38.8	52.1	51.9	43.5	51.4	529	443	537	—	—
254	Drill, heavy.....	68	28	62.7	—	—	—	—	—	—	—	—	—	—	—
255	Drill, light.....	70	28	64.0	139.6	43.8	61.4	61.2	49.9	60.1	529	243	447	3.7	85.8
256	Duck, Army.....	72	30	50.2	84.1	38.8	48.8	47.9	43.0	45.1	1149	332	937	4.6	107.8
257	Duck, wide.....	82	34	46.9	118.1	42.0	55.3	54.6	44.2	47.4	229	932	637	3.4	105.6
258	Flannel, bleached.....	23	10	46.2	77.0	34.0	45.9	45.4	35.9	47.4	629	438	737	5.7	52.6
259	Flannel, beige.....	37	11	52.5	78.9	37.1	48.7	48.0	41.7	47.2	829	333	937	6.5	62.8
260	Gingham.....	19	3	40.0	84.6	30.2	47.5	47.7	41.3	44.3	950	932	136	9.1	25.2
261c	Muslin.....	51	19	48.9	90.7	32.9	49.8	49.9	36.7	45.8	429	732	136	2.2	31.9
261e	Muslin, No. 4, 96 x 100.....	15	9	32.7	23.3	22.4	26.5	24.7	24.9	24.7	150	733	438	5.0	43.4
265	Osnaburg.....	88	35	57.8	171.4	47.5	63.4	62.2	52.2	57.5	929	732	437	3.4	109.6
266	Percale.....	33	7	46.7	88.6	32.6	49.7	49.7	35.8	43.5	230	943	337	4.6	32.0
267	Print cloth, 27-inch.....	93	38	54.8	171.0	46.0	61.9	61.1	47.9	59.9	149	243	447	3.5	121.4
268	Print cloth, 38½-inch.....	39	39	56.8	164.8	45.0	61.3	61.3	48.8	58.6	959	542	147	3.1	107.0
269	Filling sateen.....	13	5	30.5	46.8	26.6	31.2	30.8	26.6	30.3	560	543	937	5.9	7.4
270c	Sheeting, bleached.....	64	26	54.2	149.3	34.5	48.1	47.5	39.0	47.1	329	333	737	3.0	34.1
272e	Shirting, brown.....	23	4	47.1	22.2	18.8	58.9	58.0	46.7	54.6	126	233	147	2.2	72.7
275	Shirting, madras.....	57	21	46.2	107.3	35.6	50.5	50.5	20.6	47.7	1129	333	937	3.3	57.8
276	Shirting, percale.....	38	18	57.4	101.4	41.6	54.2	53.8	46.0	52.9	729	433	937	4.5	73.2
277	Ticking.....	90	36	54.6	77.8	37.6	50.8	50.2	44.0	44.4	429	932	937	2.6	90.2

279	Tire builders.....	86	34	59.5	98.3	41.9	56.6	56.2	48.9	54.2	359	952	437	3.2	102.8
280	Toweling.....	24	6	31.8	56.7	27.6	34.0	32.8	27.6	31.8	729	958	727	0	0
281c	Yarn, carded ¹	92	38	52.8	141.0	43.1	58.4	58.2	46.9	58.2	729	952	937	2.9	100.2
284c	Yarn, twisted ¹	94	39	55.1	153.4	45.8	60.0	59.7	49.1	57.4	729	952	947	3.0	107.4
Knit goods:															
286	Hose, men's, cotton.....	24	4	40	85.5	40.4	43.4	43.4	38.9	43.4	950	953	957	3.0	6.2
287	Hose, women's, mercerized.....	31	4	44	59.1	34.2	34.3	34.3	36.2	41.5	950	953	957	1.4	0
288	Hose, women's, rayon.....	35	11	59	21.5	27.7	45.1	45.1	36.9	45.1	959	953	957	4.1	21.8
289	Hose, men's, silk.....	24	6	47	5.2	18.1	32.4	32.9	23.4	32.3	140	543	546	6.3	0
290	Hose, women's, silk.....	35	6	59	45.7	32.0	48.9	48.3	40.4	48.3	959	543	1937	3.1	0
291	Hose, women's, cotton.....	27	10	29.4	---	27.4	---	28.6	27.2	28.0	124	443	---	3.0	19.6
292	Underwear, men's, cotton.....	13	3	43.2	---	28.6	---	40.3	29.6	40.3	124	443	---	8.4	20.2
293	Union suits, women's, cotton.....	4	1	8.9	---	4.2	---	14.3	4.2	7.7	731	734	---	6.7	0
294	Union suits, men's, wool.....	12	1	19.6	---	18.3	---	22.9	18.1	20.3	149	433	---	9.7	0
295c	Rayon ¹	22	6	54.1	23.0	22.6	53.6	53.2	30.6	44.1	739	433	1937	7.6	7.1
300c	Raw silk ¹	94	37	75.5	70.0	35.6	67.1	67.1	52.5	66.5	739	433	1937	2.9	77.8
303c	Silk, yarn, domestic ¹	22	37	75.5	70.0	35.6	67.1	67.1	52.5	66.5	739	433	1937	2.6	16.0
305	Silk yarn, imported.....	35	20	47.4	20.2	19.8	35.6	35.6	24.4	35.6	1240	943	---	6.5	17.4
306	Silk yarn, thrown ¹	21	8	42.7	---	18.8	---	55.8	20.0	39.0	1240	943	---	2.4	---
309	Woolen and worsted goods:	93	37	66.2	42.3	31.2	55.8	55.8	43.4	54.6	739	533	---	71.5	---
Wool broadcloth:															
310	Wool crepe.....	15	5	40.0	58.5	28.4	40.1	38.8	29.6	38.7	739	463	1937	7.1	15.8
311	Flannel.....	28	8	43.0	55.5	31.8	40.3	39.5	34.1	38.7	739	463	1937	3.2	20.6
312	Suiting, worsted.....	17	4	56.7	100.0	44.3	54.3	54.3	48.1	49.7	720	463	1937	8.1	15.6
313	Serge.....	26	9	36.5	65.0	32.3	38.6	37.8	32.1	37.8	720	463	1937	1.9	9.6
314	Sicilian cloth.....	19	5	22.9	46.3	20.0	28.3	27.3	19.1	27.3	720	463	1937	2.7	6.4
315	Flannel, 7-ounce.....	14	5	38.8	40.4	17.6	34.2	33.6	18.9	33.6	720	463	1937	2.6	8.8
316	Overcoating, heavy.....	21	4	35.1	81.6	36.6	41.0	40.3	34.7	38.2	1129	463	1937	8.2	32.8
317	Overcoating, top.....	23	2	35.7	96.0	39.9	44.0	39.6	36.7	39.6	729	463	1937	4.4	0
318c	Suiting, serge ¹	32	11	39.7	79.9	35.6	43.6	43.3	35.1	40.9	729	463	1937	1.8	9.1
322	Uniform, serge, unfinished.....	30	9	41.5	84.8	37.7	45.0	44.3	37.4	41.5	729	463	1937	2.5	11.8
323	Trousing.....	30	9	42.5	80.1	43.5	42.4	42.4	41.4	48.0	729	463	1937	1.7	13.2
324	Yarn, 3/2 stock.....	64	19	44.9	99.8	40.4	51.2	51.2	41.9	48.0	729	463	1937	2.2	41.8
329c	Yarn, weaving ¹	72	24	48.1	105.9	40.8	51.5	51.3	41.0	50.9	729	463	1937	1.7	26.3
Other textile products:															
327	Burlap.....	93	39	49.0	43.3	30.8	45.9	44.3	37.8	42.7	732	537	537	4.5	155.0
328	Hemp.....	92	38	67.1	239.4	61.2	72.3	70.8	63.6	66.4	729	537	537	4.2	117.6
329	Jute.....	83	30	63.4	99.0	40.6	60.9	59.4	49.4	57.8	729	537	537	7.2	155.4
330	Artificial leather, heavy.....	15	4	25.4	25.4	6.8	28.7	27.5	4.8	27.4	730	533	1938	2.3	7.4
331	Artificial leather, light.....	14	4	20.0	20.7	4.2	27.0	27.0	7.7	26.9	730	533	1938	7.4	7.4
332	Cotton rope.....	56	19	48.2	69.3	35.2	45.9	45.2	39.2	44.7	729	533	1937	4.2	66.4
333	Manila rope.....	19	11	38.1	35.4	21.6	32.7	29.7	23.7	25.7	729	533	1937	4.4	30.6
334	Sisal rope.....	15	4	32.1	24.4	20.8	28.6	26.3	23.3	22.1	940	533	1938	6.6	6.6
335	Sisal.....	45	19	66.6	160.5	57.2	68.3	69.2	65.0	62.5	949	533	1938	1.7	11.8
336	Cotton thread.....	5	0	4.1	0	-18.2	23.1	16.3	+23.8	-2.7	1940	632	1036	0	0
337	Linon thread.....	6	0	9.8	11.0	9.8	9.8	9.8	9.8	9.6	721	633	1448	4.4	3.6
338	Binder twine.....	14	5	42.2	41.7	28.5	39.3	38.8	32.5	32.4	721	633	1448	4.2	131.4
339	Cotton twine.....	81	34	53.4	130.9	45.0	59.7	59.2	50.3	57.4	729	733	737	6.0	0
340	Hard fiber twine.....	20	2	58.1	96.1	40.2	54.0	54.0	43.9	54.0	729	733	737	6.0	0
341c	Jute yarn ¹	18	8	31.7	21.0	22.5	25.2	23.9	24.7	22.5	730	938	938	5.2	18.6

See footnotes at end of table.

TABLE 25.—Flexibility of commodity prices measured by various criteria—Continued

Code No.	Commodity	Measures of flexibility													
		A	B	C	D	E	F	G	H	I	J	K	L	M	N
V. FUEL AND LIGHTING															
343	Anthracite:														
344	Anthracite, chestnut.....	38	33	3.2	8.1	-3.9	15.6	16.4	+4.2	+1.4	25.9	544	256	1.3	20.0
345	Anthracite, egg.....	39	30	5.1	7.4	-2.0	15.3	16.3	+2.2	+5.3	25.9	544	256	1.2	22.2
	Anthracite, pea.....	38	34	+11.9	10.4	-8.8	8.0	8.5	+8.7		125.9	933	1336	1.6	15.4
Bituminous:															
346	Soft coal, mine run.....	24	36	9.0	25.0	12.3	16.8	16.6	11.8	14.0	14.9	943	258	1.7	51.8
347	Soft coal, sizes.....	49	38	13.8	37.1	17.6	26.5	26.8	17.3	20.9	24.9	943	258	2.4	76.0
348	Soft coal, screening.....	35	37	16.3	37.5	13.6	23.2	21.5	12.7	17.3	44.9	943	258	2.0	75.0
Coke:															
349	Beehive coke.....	74	37	35.3	175.8	52.5	55.3	50.9	40.8	48.0	36.9	943	947	7.5	168.8
350c	Retort coke.....	21	13	19.4	54.8	22.7	25.2	21.3	20.5	21.2	561	733	948	4.2	34.1
Petroleum products:															
355	Fuel oil, Oklahoma.....	89	33	37.0	230.6	52.6	69.7	68.8	47.5	42.7	150	943	1248	3.8	79.6
356	Fuel oil, Pennsylvania.....	89	37	31.7	105.1	53.5	52.9	52.9	31.4	27.5	55.9	148	148	2.8	87.4
357	Gasoline, natural, Oklahoma.....	94	39	71.0	270.9	44.2	79.1	79.4	56.0	57.0	94.9	548	1148	9.1	336.6
358	Gasoline, California.....	87	31	44.9	162.7	31.7	63.2	62.2	30.4	42.8	14.9	348	1147	5.2	134.0
359c	Gasoline, eastern.....	94	39	63.8	119.8	24.8	62.5	62.4	28.6	51.0	64.9	232	537	4.1	134.4
362	Kerosene, standard.....	43	39	31.2	31.4	16.5	36.6	34.4	19.0	18.5	42.9	933	138	4.2	111.8
363	Kerosene, white.....	86	36	36.1	49.0	20.8	46.0	46.0	24.3	25.6	42.9	933	138	5.0	173.2
364	Petroleum, California.....	19	7	24.2	36.5	19.5	30.6	30.6	19.9	17.4	42.9	933	138	3.9	8.2
365	Petroleum, Kansas.....	45	18	70.7	388.9	31.2	80.7	80.7	32.2	66.5	125.9	943	948	5.1	68.4
366	Petroleum, Pennsylvania.....	60	24	66.1	109.2	33.3	62.4	61.6	42.6	57.5	94.9	943	947	3.5	72.0
VI. METALS AND METAL PRODUCTS															
Agricultural implements:															
367	Grain binder.....	2	0	6.1	22.4	7.8	12.7	7.1	7.7	6.1	94.9	454	1948	(4)	0
368	Cultivator.....	3	2	4.6	11.8	12.2	7.7	8.9	11.3	8.8	94.9	454	1248	3.3	0
369	Grain drill.....	1	1	0	26.0	11.3	11.5	8.8	10.6	8.8	124.1	434	1048	1.0	0
370	Engine, 3 horsepower.....	4	0	6.2	6.0	4.8	3.9	5.4	4.8	3.4	94.9	434	1048	(4)	0
371	Hay forks.....	3	1	8.8	26.6	11.2	19.3	18.9	11.1	18.3	94.9	434	1247	2.4	0
372	Disc harrow.....	4	0	9.0	16.3	12.0	11.5	11.9	11.4	11.8	94.9	434	1247	6.3	0
373	Peg-tooth harrow.....	4	1	8.4	30.0	17.2	19.0	17.3	16.0	17.8	42.9	434	948	9.1	0
374	Spring-tooth harrow.....	5	2	9.0	30.4	17.2	18.6	16.3	15.9	16.3	42.9	434	948	6.3	0
375	Harvester, thresher.....	1	0	2.6	-20.9	-2.4	+10.1	2.7	+2.4	+4.8	94.9	1234	1948	(4)	0
376	Hoes.....	4	0	19.4	27.2	8.6	20.4	20.0	8.6	20.0	84.1	948	1248	(4)	0
377	Hay loader.....	3	1	6.5	18.2	10.9	11.1	9.0	10.4	8.9	94.9	454	1948	1.1	0
378	Hay mower.....	2	0	5.2	28.3	13.0	9.7	10.7	12.1	10.7	94.9	454	1948	4.6	0
379	Corn picker.....	4	1	+2.2	5.1	-7.8	7.7	7.2	+8.8	+2.3	124.1	454	1948	4.6	0
380	Corn planter.....	0	0	0	0	6.0	2.5	3.2	5.7	3.2	124.1	454	1948	(4)	0
381	Tractor plow.....	0	0	0	0	8.4	2.5	3.6	7.3	5.6	124.1	454	1948	(4)	0

352	1-horse plow	5	11.8	32.5	21.3	19.4	20.6	19.7	19.7	750	753	948	1.0	3.3	
353	2-horse plow	6	8	17.4	30.1	15.3	15.8	13.7	15.1	929	933	948	1.3	7.7	
354	Pump	5	14.3	32.9	20.4	26.8	21.5	20.7	17.3	369	1222	1248	12.5	0	
355	Hand rake	4	14.1	18.4	9.4	14.9	14.4	9.3	14.3	951	952	1248	(1)	0	
356	Self-dump rake	1	8.0	22.5	10.3	10.1	7.2	9.3	7.2	1251	1254	1258	5.2	0	
357	Side delivery rake	4	1	23.9	14.0	15.8	12.3	12.9	12.3	929	934	1258	1.2	0	
358	Cream separator	5	2	9.7	16.5	9.7	11.6	9.5	10.3	929	934	958	1.8	0	
359	Corn sheller	0	0	0	0	17.8	11.1	15.2	11.1	1451	1454	---	(1)	0	
360	Shovels	5	10.8	16.1	9.7	12.4	7.5	9.5	3.8	1129	938	1258	8.8	10.2	
361	Spades	3	15.0	49.3	8.0	19.8	16.3	6.5	3.7	1231	733	1258	(1)	0	
362	Manure spreader	2	12.5	25.6	11.2	16.7	13.5	10.7	13.5	1231	54	558	(1)	0	
363	Grain thresh	2	1	18.6	7.0	11.2	6.1	6.9	6.1	929	1254	1958	5.4	0	
364	Tractor, 10-20 horsepower	0	6.4	10.0	14.2	10.3	12.9	13.8	12.9	250	454	1258	(1)	0	
365	Tractor, 15-30 horsepower	5	29.3	25.6	13.7	25.1	22.7	17.5	22.3	1153	1058	(1)	(1)	0	
366	Wagon, 2-horse	0	11.4	27.7	15.0	19.9	16.8	13.0	8.3	950	953	158	(1)	0	
367	Windmill	6	10.0	23.2	13.0	15.6	12.8	12.4	12.2	329	953	158	1.6	0	
Iron and steel:															
368	Angle bars	2	7.3	9.8	1.4	8.1	7.6	1.4	5.2	1251	1254	948	(1)	0	
369	Augers	0	0	0	0	38.2	0	0	13.9	1251	1254	1258	(1)	0	
370	Axes	6	0	61.7	16.9	28.1	33.7	17.3	22.9	929	1253	158	2.1	12.0	
371	Bar iron, Chicago	28	7	50.0	26.4	28.1	24.7	24.5	0	1251	1253	958	2.1	0	
372	Bar iron, Pittsburgh	4	4	1.7	0	6	0	6	30.1	1259	953	158	2.9	50.0	
373	Reinforcing bars	38	18	22.0	74.7	37.2	36.4	37.2	23.6	929	953	158	1.6	28.8	
374	Steel sheet bars	39	19	30.6	42.2	31.9	31.1	27.2	23.8	929	953	158	1.7	21.0	
375	Steel sheet bars	29	14	26.8	42.2	27.5	28.7	27.0	23.8	929	953	158	1.5	26.8	
376	Steel finished bars	36	23	26.1	70.6	34.6	33.7	29.1	29.1	1059	953	158	(1)	0	
377	Steel barrels	0	25.3	45.8	25.6	28.5	25.3	24.7	22.6	950	953	158	2.0	21.6	
378	Steel billets	28	11	26.2	42.3	26.0	28.0	25.4	22.6	959	953	158	3.9	8.8	
379	Boiler tubes	3	13.0	10.0	1.4	6.2	5.2	1.4	13.1	1251	1254	948	12.3	0	
380	Machine bolts	13	1	67.7	52.1	22.6	30.9	30.2	21.7	16.7	152	958	7.6	45.2	
381	Plow bolts	17	7	28.6	52.1	22.6	35.9	34.7	21.1	430	958	958	2.3	10.4	
382	Stove bolts	17	7	16.1	52.0	25.7	28.2	23.8	20.4	130	132	958	2.7	20.8	
383	Track bolts	15	10	10.3	27.9	15.2	17.6	16.9	14.5	11.4	1531	958	6.2	79.6	
384	Butts (hinges)	29	14	8.0	45.0	18.2	29.6	24.3	17.1	21.5	1253	953	2.5	3.2	
385	Sanitary cans	6	2	14.0	2.1	2.0	8.5	13.5	2.2	8.5	1259	942	6.6	2.2	
386	Malleable castings	24	3	26.7	27.1	14.0	28.4	28.2	15.3	19.8	1259	942	(1)	0	
387	Chisels	0	0	0	5.8	1.8	2.8	0.1	1.8	1.1	1251	1254	(1)	0	
388	Files	1	0	0	4.0	0.5	2.0	1.7	5.5	+1.7	1251	1254	(1)	0	
389	Hammers	7	0	29.8	50.4	23.6	37.9	37.9	25.2	25.2	250	953	1258	0	0
390	Hatchets	7	0	18.1	44.6	19.3	30.0	30.0	19.1	19.1	250	953	1258	0	0
391	Corn knives	3	0	0.3	18.5	9.4	8.6	13.3	8.6	8.6	951	353	(1)	0	
392	Door knobs	16	4	50.0	100.3	23.8	60.7	59.7	28.7	33.9	959	1254	1157	10.7	28.6
393	Notrile locks	19	5	37.5	100.0	11.2	58.8	57.9	13.1	20.0	929	1254	8.5	18.2	
394	Wire nails	41	14	30.0	48.9	23.2	32.1	31.3	24.7	25.4	929	1254	1.6	22.0	
395	Messabiore 1	2	2	0	9.8	4.7	3.8	3.3	+2.9	429	1254	158	2.0	0	
396	Pig iron 1	48	26	22.1	64.4	31.4	32.2	29.1	26.0	950	953	958	2.3	48.4	
397	Ferromanganese	20	9	35.2	50.8	28.5	34.5	29.6	26.5	1129	953	958	7.0	57.0	
398	Foundry iron, Birmingham	35	18	26.7	81.7	39.7	39.1	36.3	34.8	229	353	958	2.4	12.0	
399	Spiegelisen	29	16	26.1	19.2	39.8	21.2	19.5	17.9	950	953	958	3.5	54.8	
400	Cast iron pipe	62	27	0	88.0	50.7	38.5	31.6	20.0	226	952	958	2.1	31.4	

See footnotes at end of table.

TABLE 25.—Flexibility of commodity prices measured by various criteria—Continued

Code No.	Commodity	Measures of flexibility													
		A	B	C	D	E	F	G	H	I	J	K	L	M	N
VI. METALS AND METAL PRODUCTS—continued															
Iron and steel—Continued.															
435	Black steel pipe.....	9	3	6.9	21.0	4.2	19.0	17.9	5.9	3.4	340	948	948	3.3	10.0
436	Galvanized pipe.....	9	3	5.2	14.6	2.0	15.5	14.4	3.7	1.1	930	933	938	1.6	4.8
437	Planes, jack.....	7	0	37.9	18.9	26.1	17.6	13.8	10.4	12.7	1450	743	1448	(4)	0
438	Steel plates.....	40	18	17.9	50.0	25.7	28.6	27.9	23.9	19.0	929	543	548	1.8	26.8
439	Steel rails.....	4	0	7.0	16.8	0.1	14.9	14.9	1.1	2.5	1231	1234	938	(4)	0
440	Rivets, large.....	30	19	27.4	60.0	34.4	32.9	32.1	31.9	28.0	430	543	948	3.1	40.8
441	Rivets, small.....	15	7	10.0	36.8	14.0	19.3	14.8	12.8	12.5	430	543	948	3.1	21.6
442	Wire rods.....	24	12	16.6	34.2	16.6	23.7	23.0	15.7	17.6	949	743	1133	2.4	22.4
443	Crosscut saws.....	7	2	15.5	19.8	3.0	16.0	11.6	3.1	11.6	941	743	1248	2.4	4.8
444	Hand saws.....	5	0	27.1	39.5	6.0	27.8	24.9	6.1	24.9	941	743	1248	(4)	0
445	Steel scrap.....	85	34	64.9	327.3	66.0	73.5	73.5	61.0	70.3	949	743	937	3.5	112.6
446	Annealed sheets.....	70	34	28.5	53.5	25.9	32.3	31.6	24.9	27.1	929	733	938	1.5	42.6
447	Auto body sheets.....	57	22	39.0	42.8	24.0	34.6	34.6	25.7	31.9	929	733	938	1.3	21.2
448	Galvanized sheets.....	64	28	29.7	48.9	22.7	31.5	30.8	22.3	27.4	949	743	938	1.3	22.6
449	Skelp.....	18	9	13.6	40.1	20.7	25.1	23.9	19.8	13.5	229	442	948	2.0	15.8
450	Track spikes.....	17	9	14.3	36.9	14.4	22.6	22.0	13.7	15.8	241	942	948	1.0	3.8
451	Cold rolled steel.....	61	26	35.7	77.9	35.6	41.0	40.2	33.6	37.3	229	442	948	2.1	23.6
452	Structural steel.....	32	17	18.0	48.6	25.2	28.0	27.3	23.4	18.0	939	742	948	2.5	40.4
453	Terneplate.....	13	4	15.2	37.9	15.0	25.0	20.9	15.0	10.4	1049	1132	1248	1.1	0
454	Tie plates.....	18	9	18.6	31.4	17.4	21.4	20.6	14.7	17.7	1249	943	948	2.2	8.8
455	Tin plates.....	10	3	20.6	36.0	14.6	23.6	19.8	12.4	19.7	1249	943	1247	2.1	3.6
456	Vises.....	2	2	0	6.5	3.0	3.2	4.2	3.1	3.1	1231	1234	1237	6.7	0
457c	Wire 1.....	35	12	21.0	44.4	17.0	28.3	27.6	14.9	19.0	729	1733	1937	1.4	16.1
460	Woven fence wire.....	9	0	21.2	48.0	16.9	28.1	27.2	16.0	20.6	731	933	938	(4)	0
461	Wood screws.....	39	18	22.4	81.9	29.8	39.5	34.9	28.1	23.2	430	543	1447	6.6	92.6
Motor vehicles:															
462c	Passenger cars 1.....	5	14.2	4.7	11.0	9.1	11.0	11.0	1.8	4.6	729	743	1947	3.5	5.9
468	Trucks.....	16	23.5	13.8	18.2	18.2	18.2	13.5	6.4	13.4	1049	943	1948	2.0	20.4
Nonferrous metals:															
469	Aluminum.....	13	12	4.2	0	-3.8	8.8	8.8	-4.2	-4.2	940	1244	1348	1.0	0
470	Antimony.....	94	39	35.8	239.5	73.9	62.4	62.3	54.0	53.0	749	742	447	6.7	135.2
471	Babbitt metal.....	17	4	24.3	95.7	42.9	42.5	42.5	36.7	33.7	749	742	1047	2.9	4.0
472	Copper, electrolytic.....	80	35	13.3	231.7	55.6	74.3	74.3	64.4	69.6	949	743	947	3.0	61.8
473	Lead, soft.....	82	39	57.1	161.3	47.4	62.3	62.3	50.4	53.8	949	743	947	2.8	85.0
474	Nickel, cathode.....	2	2	0	0	0	0	0	0	0	729	1234	1448	5.2	0
475	Lead pipe.....	70	30	41.7	91.3	35.4	47.3	47.3	36.0	38.5	449	742	947	2.7	66.2
476	Mercury.....	83	39	60.9	106.5	37.4	52.6	51.6	39.2	48.8	949	942	947	2.5	59.8
477	Brass rods.....	67	28	60.0	104.7	39.3	57.9	57.9	45.0	53.2	349	343	947	2.5	36.4
478	Copper rods.....	72	30	57.6	96.5	37.4	57.3	57.3	43.6	50.3	349	343	947	2.4	45.4

VII. BUILDING MATERIALS

479	Brass sheets.....	67	30	52.7	91.3	37.8	52.4	52.4	41.4	46.8	359	353	357	2.1	35.0
480	Copper sheets.....	68	30	48.0	74.9	32.9	49.6	49.6	36.8	42.0	349	343	347	2.0	21.0
481	Zinc sheets.....	34	21	12.5	41.0	16.0	23.6	23.6	15.4	11.4	340	333	347	2.6	38.4
482	Silver.....	95	39	49.8	77.4	39.2	57.7	57.7	42.5	51.5	349	342	346	1.8	49.4
483	Solder.....	75	30	47.2	155.4	56.2	65.7	65.7	52.5	51.5	349	342	347	1.9	34.2
484	Tin.....	95	39	46.8	245.5	61.6	65.7	65.7	55.9	53.6	349	342	347	2.3	64.6
485	Brass tubes.....	68	29	70.4	34.1	34.1	50.8	50.8	38.3	45.8	349	343	347	1.7	26.8
486	Brass wire.....	67	28	53.7	93.3	38.8	53.1	53.1	42.5	47.6	349	343	347	2.2	34.0
487	Copper wire.....	67	31	59.9	161.6	53.5	65.2	65.2	57.4	57.1	349	343	347	2.5	36.8
488	Zinc pig.....	38	35	56.6	162.5	52.8	60.5	60.5	52.6	54.8	349	342	347	2.2	56.0
Plumbing and heating:															
489	Heating boilers.....	16	16	30.3	37.3	16.0	32.9	31.5	23.2	26.8	349	354	1258	4.5	63.2
490	Range boilers.....	29	22	14.6	34.9	18.2	18.2	10.2	14.5	5.7	1280	1332	738	3.9	57.6
491	Water closets.....	35	12	61.4	47.4	29.2	51.0	50.9	36.3	50.9	349	343	738	5.2	52.4
492	Lavatories.....	44	17	29.7	30.6	13.1	30.8	29.7	14.3	24.4	349	343	737	1.8	17.6
493	Radiators.....	24	15	40.9	57.6	34.0	40.4	39.0	36.5	35.9	349	343	538	5.7	62.2
494	Sinks.....	22	6	40.7	17.0	6.5	33.7	33.7	7.7	30.0	349	343	1258	4.7	8.6
495	Bathtubs.....	26	6	40.1	41.0	16.8	38.7	38.7	18.5	35.1	349	343	1258	4.9	8.4
496	Laundry tubs.....	16	5	30.7	42.2	20.4	37.6	35.9	22.9	34.5	349	343	1257	2.2	7.4
VII. BUILDING MATERIALS															
Brick and tile:															
497	Concrete blocks.....	2	1	30.3	4.9	5.0	19.9	19.4	5.9	14.7	1251	953	1157	13.2	0
498	Common brick.....	36	27	22.3	19.6	30.7	19.4	18.8	14.6	18.7	349	343	737	.3	5.6
499	Fire brick.....	11	3	18.6	46.6	23.9	25.8	21.1	22.2	21.0	341	333	538	7.2	14.4
500	Face brick.....	18	11	12.6	27.2	15.1	17.3	17.3	14.4	17.2	349	343	937	2.7	10.8
501	Paving brick.....	19	2	22.4	32.2	18.2	31.7	30.8	19.6	18.6	349	1952	1258	8.9	11.8
502	Sand lime brick.....	7	2	25.0	18.5	14.6	20.5	18.6	15.6	18.5	731	534	1258	4.4	0
503	Silica brick.....	11	3	18.6	46.5	24.2	25.7	23.0	22.3	21.0	231	533	138	7.3	14.6
504	Drain tile.....	11	4	36.4	64.6	29.8	39.2	36.6	29.5	30.1	349	343	738	11.9	38.8
505	Floor tile.....	7	0	51.4	51.4	43.8	33.6	33.6	30.7	30.1	959	453	238	(*)	0
506	Hollow building tile.....	12	2	36.4	56.5	33.2	38.6	38.5	34.5	33.9	830	532	1258	16.0	30.6
507	Roofing tile.....	7	1	0	.6	2.4	7.8	7.8	2.5	7.2	349	1254	1258	14.1	0
508	Wall tile.....	6	2	47.5	39.5	12.6	47.0	48.3	23.4	44.2	349	343	738	4.6	0
Cement:															
509	Portland cement.....	15	5	12.9	27.3	17.4	21.0	21.0	17.0	13.4	759	552	350	1.2	0
Lumber:															
510	Douglas fir lath.....	91	12	38.1	74.5	28.8	38.6	38.6	36.2	38.6	1059	533	1258	6.5	51.8
511	Yellow pine lath.....	89	37	46.7	147.3	52.8	57.8	57.8	49.5	53.4	459	1232	247	3.1	77.4
512	Red cedar.....	27	16	27.7	61.8	22.8	34.0	23.9	22.5	20.2	530	533	1937	2.8	32.6
513	Chestnut.....	12		14.9	62.7	29.2	28.8	28.8	24.3	28.1		1258	1258		
514	Cypress.....	24	3	18.8	49.3	26.5	28.8	28.8	24.3	28.1	459	533	1258	7.1	11.6
515	Douglas fir, No. 1c.....	91	20	49.3	153.4	55.8	56.7	56.5	51.6	56.1	959	243	637	2.4	29.8
516	Douglas fir, B.....	91	18	51.8	140.0	53.4	58.3	57.6	51.8	55.8	839	143	937	2.4	40.4
517	Gum lumber.....	59	29	48.7	117.2	45.2	53.0	53.0	46.5	48.0	459	143	937	3.1	86.6
518	Hemlock.....	39	8	25.3	27.8	20.1	24.0	24.0	22.1	22.1	959	533	937	3.8	24.8
519	Maple.....	36	12	50.9	120.0	47.0	54.6	54.2	47.2	49.1	930	532	1937	3.3	34.2
520	Oak.....	37	16	31.1	42.4	23.9	31.6	30.9	24.9	29.2	559	533	937	2.3	27.2
521	White pine.....	38	13	27.6	22.4	17.3	21.1	20.4	17.8	17.0	959	433	1137	4.9	28.0
522	Yellow pine flooring.....	92	37	55.2	172.8	58.6	60.9	60.9	54.2	58.7	1959	353	937	1.4	25.0

See footnotes at end of table.

TABLE 25.—Flexibility of commodity prices measured by various criteria—Continued

Code No.	Commodity	Measures of flexibility													
		A	B	C	D	E	F	G	H	I	J	K	L	M	N
VII. BUILDING MATERIALS—continued															
Lumber—Continued.															
523	Yellow pine timbers	39	13	39.1	92.0	38.6	45.5	44.6	37.5	38.0	12.9	12.32	5.37	3.4	37.2
524	Ponderosa pine	32	10	40.0	73.6	30.9	44.0	44.0	31.9	44.0	3.9	5.33	5.37	3.1	25.6
525	Poplar	9	2	34.7	67.8	28.6	40.2	36.4	28.8	32.6	5.9	1.33	12.38	2.1	0
526	Redwood	76	28	35.5	74.4	34.8	42.7	42.7	35.2	35.9	1.2	5.42	2.37	1.1	23.0
527	Spruce	86	34	45.4	115.5	46.6	51.1	51.1	43.3	43.3	2.9	2.43	19.38	3.1	105.2
528	Cedar shingles	22	2	39.1	90.7	46.0	45.6	45.6	44.4	40.8	9.30	1.32	5.38	5.2	8.6
Paint and paint materials:															
529	Cypress shingles														
530	Enamel	5	0	22.0	25.3	8.3	21.1	17.8	14.8	17.8	1.31	5.33	12.38	(¹)	0
531	Inside flat paint	12	4	10.6	2.6	2.7	9.5	9.5	2.9	6.7	12.30	5.33	5.37	3.8	0
532	Outside white paint	10	0	29.2	39.4	17.5	28.8	26.3	19.8	23.9	7.39	5.33	12.38	(¹)	0
533	Porch and deck paint	10	0	20.7	26.9	11.6	25.3	22.2	15.2	18.0	9.30	5.33	12.38	(¹)	0
534	Roof and barn paint	6	0	18.5	26.9	11.3	19.9	16.5	14.6	16.5	1.31	5.33	12.38	(¹)	0
535	Floor varnish	6	0	20.2	32.3	11.4	22.4	20.6	15.6	20.6	1.31	5.33	12.38	(¹)	0
536	Barytes	2	2	0	-1.7	-8	+8	+8	+8	+8	12.31	12.34	12.38	5.2	0
537	Butyl acetate	41	21	26.6	0	3.8	26.4	31.0	4.8	9.5	9.9	7.34	1.56	4.2	32.4
538	Bone black	8	0	0	18.2	7.2	8.3	4.4	6.7	0	12.31	12.34	6.38	(¹)	0
539	Carbon	13	4	66.0	47.1	38.7	54.7	54.7	51.8	54.7	19.39	12.34	19.37	9.4	37.4
540	Iron oxide, black	4	1	0	3.2	11.3	14.6	13.5	12.7	12.1	12.31	12.34	12.38	4.8	0
541	Lamp black	7	0	27.3	0	-6	20.0	20.0	+7	20.0	12.31	12.34	12.38	(¹)	0
542	Prussian blue	10	9	0	5.7	1.8	2.8	4.8	1.8	+5	12.31	12.34	11.56	2.6	18.6
543	Chrome green	6	5	14.8	4.3	8.8	9.8	8.9	9.4	8.0	4.31	12.34	12.38	1.4	3.6
544	Chrome yellow	21	16	11.8	6.7	1.0	9.1	7.0	1.0	23.4	9.9	12.34	3.37	1.6	20.4
545	Ethyl acetate	29	15	25.0	0	8.7	36.2	38.8	11.5	23.4	3.9	12.34	3.37	6.1	48.6
546	Copal gum	29	8	21.4	34.7	24.0	31.6	35.0	25.0	35.2	3.9	12.34	3.37	6.3	14.4
547	Red lead	61	24	38.1	65.3	30.9	40.0	40.0	32.1	35.2	3.9	12.34	3.37	2.7	50.6
548	White lead	15	8	19.9	18.1	9.3	19.2	19.2	9.7	13.7	3.9	12.34	3.37	2.0	6.4
549	Litharge	63	25	42.1	77.1	34.3	44.0	44.0	35.8	39.1	3.9	12.34	3.37	2.8	52.6
550	Lithopone	3	2	14.3	2.9	6.7	7.8	7.8	7.2	5.3	11.30	12.34	5.38	2.3	0
551	China wood oil	85	36	64.3	335.7	61.8	72.8	70.6	59.0	66.4	19.39	5.33	10.37	10.7	377.8
552	Linseed oil	32	38	31.4	104.2	42.4	59.3	58.0	45.2	38.3	5.93	5.33	10.37	2.5	80.0
553	Putty	17	3	38.2	39.8	27.2	33.7	33.7	29.5	33.2	9.30	5.33	10.37	20.8	25.0
554	Rosin, grade B	94	39	63.2	278.5	61.9	71.4	71.4	61.1	68.3	19.39	5.33	10.37	5.7	167.8
555	Shellac	87	39	80.2	64.5	40.6	70.7	70.9	62.2	70.3	3.9	5.33	9.36	8.9	345.6
556	Turpentine, South	95	39	13.9	33.9	6.7	34.4	34.4	7.9	14.3	1.31	5.33	10.37	3.4	74.2
557	Whiting	1	1	0	7.4	3.7	3.6	3.6	3.6	3.6	12.31	12.34	12.38	20.0	0
558	Zinc oxide	10	5	17.1	15.5	9.3	15.3	11.4	9.8	9.3	9.39	5.33	7.37	4.4	3.6

Other building materials:

559	Asphalt.....	3	0	16.7	49.9	16.7	33.3	16.7	16.7	12.41	8.62	19.56	(4)	0
560	Plasterboard.....	3	2	+7.2	0	-8.6	0	+8.9	+3.5	12.41	12.41	2.37	(4)	6.3
561	Wallboard.....	9	2	16.7	10.0	27.8	13.1	5.9	29.5	8.90	6.44	1.38	(4)	11.5
562	Doors.....	14	1	28.1	68.3	27.8	29.5	26.3	19.4	6.30	6.30	7.37	(4)	1.6
563	Doorframes.....	7	1	24.0	41.6	16.7	26.8	16.8	19.4	6.30	6.30	7.37	(4)	1.3
564	Window frames.....	8	1	21.5	33.2	16.7	23.3	16.9	15.7	9.28	9.28	3.37	(4)	1.5
565c	Plate glass ¹	6	3	5.5	-14.1	-8.7	+8.7	+7.1	+7.0	9.30	9.30	1.34	(4)	8.7
567c	Window glass ¹	13	7	33.8	76.2	23.0	44.0	26.1	32.8	12.40	12.40	1.54	(4)	6.5
569	Gravel.....	34	11.5	18.4	12.6	14.6	17.8	12.8	14.8	1.59	1.59	10.32	(4)	1.5
570	Quicklime.....	34	14.0	9.2	7.8	14.6	14.2	8.2	11.0	3.59	3.59	4.33	(4)	9.2
571	Slaked lime.....	14	39	17.9	17.2	11.8	17.7	16.9	12.1	3.59	3.59	4.33	(4)	7.8
572	Sewer pipe.....	13	6	27.6	33.2	13.8	26.3	27.6	20.8	9.60	9.60	3.63	(4)	9.6
573	Plaster.....	8	3	+80.0	25.0	-20.6	5.9	+14.9	+20.0	12.41	12.41	12.48	(4)	41.8
574c	Prepared roofing ¹	37	23	16.1	48.5	13.0	27.0	11.8	11.8	8.59	8.59	7.42	(4)	0
577	Strip singlles.....	41	21	13.6	74.7	13.6	32.6	30.8	25.2	12.80	12.80	3.42	(4)	55.3
578	Slate.....	6	0	50.0	22.2	18.0	38.0	22.3	37.9	1.20	1.20	7.34	(4)	78.0
579	Sand.....	14	35	6.3	27.8	13.6	18.8	13.3	13.3	3.59	3.59	1.37	(4)	0
580	Window sash.....	12	0	35.0	105.9	36.8	46.4	39.0	36.6	9.40	9.40	7.33	(4)	60.0
581	Stone, crushed.....	7	3	6.2	105.9	36.8	46.4	39.0	36.6	12.41	12.41	1.32	(4)	0
582	Tar.....	22	8	23.0	47.1	29.6	33.4	29.3	33.4	3.59	3.59	12.48	(4)	10.2

VIII. CHEMICALS AND DRUGS

Chemicals:

583	Acetic acid.....	21	6	31.7	5.4	14.1	25.1	17.4	13.5	5.60	12.64	8.47	(4)	3.3
584	Boric acid.....	11	7	21.7	22.2	11.6	26.6	12.1	20.0	12.51	12.51	1.38	(4)	0
585	Carbon dioxide liquid.....	0	0	0	0	0	0	0	0	12.51	12.51	1.38	(4)	0
586	Muriatic acid.....	6	6	0	4.6	1.2	2.2	1.2	0	12.51	12.51	1.38	(4)	3.6
587	Nitric acid.....	5	5	0	0	0	0	0	0	12.51	12.51	1.38	(4)	2.3
588	Oleic acid.....	42	15	47.4	115.2	44.0	52.4	43.1	51.6	3.59	3.59	7.37	(4)	7.8
589	Phosphoric acid.....	15	2	+94.7	0	0	17.3	0	17.3	9.49	9.49	12.88	(4)	32.8
590	Salicylic acid.....	4	4	0	0	0	0	0	0	12.51	12.51	1.38	(4)	0
591	Stearic acid.....	41	16	39.4	48.7	33.5	41.8	37.0	39.0	3.59	3.59	7.32	(4)	0
592	Sulfuric acid.....	4	4	0	6.4	1.2	3.1	1.3	0	12.51	12.51	1.38	(4)	2.8
593	Denatured alcohol.....	49	25	18.9	29.6	8.0	35.8	9.2	2.3	1.59	1.59	3.60	(4)	6.1
594	Wood alcohol.....	28	18	36.2	5.6	17.0	26.8	20.7	21.3	10.59	10.59	1.42	(4)	120.4
595	Aluminum sulfate.....	4	0	10.7	8.0	8.9	9.1	9.1	9.1	11.50	11.50	4.58	(4)	0
596	Anhydrous ammonia.....	18	12	+10.7	5.0	-3.6	-1.3	+3.3	+3.3	9.40	9.40	1.43	(4)	70.0
597	Aqua ammonia.....	17	8	0	15.9	-5.0	18.3	+5.3	+5.3	12.51	12.51	1.38	(4)	38.2
598	Anilin oil.....	13	3	+6.7	0	-6.6	0	+6.6	+6.6	12.51	12.51	1.38	(4)	18.2
599	Arsenic, white.....	7	3	0	-14.3	-13.5	0	+13.5	+13.5	12.51	12.51	1.38	(4)	0
600	Baking powder, 1 pound.....	7	1	8.2	-16.5	-8.8	6.2	+10.1	+8	3.59	3.59	12.34	(4)	0
601	Baking powder, 10 pounds.....	4	0	9.3	2.6	-2.8	9.1	+3.0	2.1	9.51	9.51	12.88	(4)	41.2
602	Benzene.....	24	13	13.0	-11.2	-3.0	7.7	12.3	+2.6	19.59	19.59	7.36	(4)	3.4
603	Bleaching powder.....	4	0	12.5	14.3	12.5	12.5	12.5	12.5	7.51	7.51	19.38	(4)	0
604	Borax.....	10	6	23.7	19.0	12.3	13.2	7.3	12.4	12.51	12.51	5.47	(4)	7.7
605	Calcium acetate.....	15	5	44.5	12.5	19.9	40.7	27.1	24.3	5.60	5.60	2.62	(4)	0
606	Calcium arsenate.....	23	13	15.4	13.7	14.8	22.9	15.6	13.8	1.40	1.40	5.43	(4)	51.4
607	Calcium carbide.....	2	2	0	0	0	0	0	0	12.51	12.51	1.38	(4)	4.9

See footnotes at end of table.

TABLE 25.—Flexibility of commodity prices measured by various criteria—Continued

Code No.	Commodity	Measures of flexibility													
		A	B	C	D	E	F	G	H	I	J	K	L	M	N
VIII. CHEMICALS AND DRUGS—continued															
Chemicals—Continued.															
608	Calcium chloride.....	6	2	10.0	8.6	4.1	10.3	6.7	4.4	4.0	1351	1234	358	2.4	0
609	Coal tar black.....	4	4	0	0	0	0	0	0	0	1351	1234	1238	10.9	29.0
610	Coal tar brown.....	7	3	0	25.1	4	0	0	4	0	730	1352	1238	7.9	0
611	Coal tar Indigo.....	2	2	0	0	0	0	0	0	0	1351	1234	1238	3.6	0
612	Coal tar nigrosine.....	8	4	30.0	16.7	16.9	29.5	29.5	19.9	17.6	1351	1234	1238	11.0	43.8
613	Copperas.....	12	7	7.6	9.2	8.6	12.0	12.0	8.9	4.0	240	732	1238	5.3	29.2
614	Copper sulfate.....	56	24	50.0	110.4	44.4	55.2	54.8	47.7	44.3	329	952	1238	5.2	9.8
615	Gresolite.....	10	6	26.7	22.8	19.4	22.8	21.4	20.5	21.4	731	1154	1258	5.9	28.4
616	Formaldehyde.....	21	16	36.8	-4.2	15.7	21.3	22.6	19.2	21.3	659	1254	1056	6.2	50.6
617	Logwood extract.....	14	9	33.4	87.6	27.9	40.8	37.3	25.4	37.3	1351	533	1258	7.2	55.6
618	Naphthalene.....	16	14	+22.2	61.1	24.8	23.4	23.4	19.0	6.4	1351	533	1258	4.8	39.2
619	Pine oil.....	36	16	9.2	31.5	8.5	21.6	15.3	8.4	4.4	959	1254	1337	2.5	33.2
620	Caustic potash.....	9	3	12.3	2.0	4.5	8.4	8.4	4.7	6.6	959	1352	1238	3.5	10.4
621	Quebracho extract.....	23	8	54.7	77.8	42.0	51.3	50.7	47.6	47.9	959	932	1238	5.6	36.4
622	Sal soda.....	9	6	+11.1	9.9	2.2	4.7	4.7	2.0	4.7	950	933	1238	6.6	19.8
623	Salt cake.....	22	8	13.3	15.4	5.6	25.7	18.8	6.4	3.7	950	1254	1258	9.4	50.0
624	Granulated salt.....	9	3	+4.0	6.7	-2.2	3.3	3.0	+2.1	+2.4	1351	1054	1258	5.3	5.4
625	Soda ash.....	13	3	8.9	7.0	5.2	10.8	10.8	5.6	4.8	1350	1053	757	2.0	0
626	Sodium bicarbonate.....	3	1	7.5	0	1.6	3.9	3.9	1.7	1.3	1351	1254	1258	5.3	0
627	Caustic soda.....	16	5	+1.7	4.1	3.6	10.0	10.0	4.0	+8.1	1350	1053	757	1.6	0
628	Sodium silicate.....	7	3	+7.1	14.3	0	6.7	6.7	0	0	1351	1053	1237	4.3	0
629	Sodium sulfide.....	11	7	+4.4	0	-4.3	1.2	1.2	+4.3	+4.4	1351	1254	1238	5.8	20.4
630	Crude sulfur.....	3	3	0	0	0	0	0	0	0	1351	1254	958	5.5	11.0
631	Tallow, Packers'.....	90	35	67.1	264.0	61.0	72.4	72.4	61.9	72.4	259	753	737	3.4	99.6
632	Toluene.....	10	2	25.0	11.3	12.5	22.9	22.9	14.3	14.3	1259	1254	458	7.2	0
633	Palm kernel oil.....	65	28	43.9	165.7	28.6	64.4	64.4	33.4	50.3	259	834	157	1.8	32.4
634	Palm niger oil.....	88	34	64.1	163.8	44.8	65.6	65.6	53.4	64.9	259	353	157	2.2	67.2
Drugs and pharmaceuticals:															
635	Citric acid.....	24	8	37.0	-10.7	9.6	21.2	26.2	12.7	18.4	1950	1254	256	1.2	8.0
636	Tartaric acid.....	46	15	48.1	23.8	20.6	36.8	32.3	25.5	33.6	560	458	1258	3.1	13.6
637	Grain alcohol.....	22	12	8.2	87.5	42.2	33.7	33.5	31.7	31.1	1359	1159	1158	2.8	1.8
638	Caffeine.....	21	12	32.2	23.8	9.8	26.3	24.1	10.9	24.1	959	733	1258	1.8	0
639	Camphor.....	85	34	38.3	48.6	27.4	37.8	38.0	29.1	36.7	1259	233	1350	2.2	58.0
640	Castor oil.....	42	26	31.2	16.5	15.2	24.9	24.9	16.9	24.9	959	633	1257	2.6	62.6
641	Chlorine, liquid.....	18	4	41.6	38.7	29.3	39.8	39.8	33.9	32.0	959	1352	1358	9.4	12.6
642	Chloroform.....	5	0	7.4	20.0	14.7	16.7	16.7	14.2	16.7	959	953	1358	(3)	0
643	Cream of tartar.....	42	14	44.7	40.9	17.1	40.1	35.4	20.4	32.9	459	953	1358	3.3	19.4
644	Epsom salts.....	6	4	+4.0	-6.0	-7.1	+3.1	+3.1	+7.4	+9.5	1351	1254	1258	5.1	20.4
645	Glycerin, C. P.....	48	24	26.9	183.1	56.0	54.0	54.0	43.2	54.0	259	1053	357	3.8	54.6

	14	0	43.0	-21.0	-10.5	38.2	39.7	+16.4	13.8	12.31	4.53	12.38	(1)	0
Iodine	89	38	36.5	5.5	26.2	48.9	40.5	32.0	31.0	2.99	9.32	2.96	4.6	146.0
Menthol	4	3	12.9	8	4	10.7	10.7	5	+1.3	3.51	9.32	2.96	(1)	0
Optum	17	13	11.7	7.4	6.0	10.1	10.1	6.2	10.0	12.51	19.33	12.38	2.1	6.4
Hydrogen peroxide	22	2	36.3	-21.4	-4.0	2.6	1.8	+4.0	+7.6	11.50	12.38	12.38	5.4	22.8
Phenol	15	2	0	69.9	17.2	39.2	41.1	+28.5	5.7	7.29	12.4	4.36	27.4	48.0
Potassium iodide	17	0	30.8	6.6	-2	20.4	23.0	14.8	13.9	13.1	4.38	12.38	11.6	0
Quinine sulfate	13	3	44.0	29.9	3.2	35.2	42.7	3.7	15.9	19.29	19.33	12.38	(1)	0
Sodium phosphate	15	9	17.2	-2.5	4.8	10.8	10.8	5.4	35.1	7.30	9.34	12.38	8.5	10.2
Strychnine	70	28	61.4	64.8	36.7	58.0	57.0	47.7	51.1	3.49	7.32	9.38	2.8	57.6
Zinc chloride	38	15	47.3	76.9	33.8	49.5	46.4	35.3	38.1	5.51	9.32	7.37	5.9	64.0
Fertilizer materials:	10	7	0	-32.0	-20.2	+11.5	15.6	5.2	+25.3	12.51	9.33	12.38	2.9	16.0
Ammonium sulfate	9	5	+1.1	32.0	5.6	18.3	15.6	5.2	3	12.51	12.38	12.38	2.4	0
Bones, ground	690	5	4.0	48.2	1.5	31.9	29.8	1.5	1.6	12.51	12.38	12.38	1.8	0
Phosphate rock	681	3	+1.1	30.8	-13.3	32.9	31.1	+15.1	+17.2	12.51	12.38	12.38	1.4	0
Kainit, 20 percent	682	10	3	8.6	-11.3	18.4	16.7	+12.7	+13.7	12.51	12.38	12.38	1.1	0
Manure salts, 20 percent	683	34	40.4	18.8	9.2	33.6	32.2	11.7	28.0	4.29	9.32	12.38	2.2	57.8
Muriate of potash, 80 percent	684	15	38.7	41.5	17.2	35.1	33.3	33.3	33.3	5.59	7.32	12.38	3.5	62.6
Sulfate of potash, 90 percent	685	57	68.9	295.7	63.8	74.8	74.8	69.4	71.7	9.59	7.32	12.38	5.7	83.2
Sodium nitrate	42	16	35.5	25.0	14.8	32.2	31.2	17.5	25.2	7.59	4.33	9.38	2.9	39.2
Superphosphate	22	12	33.4	26.9	17.6	29.0	28.1	19.4	26.3	7.59	9.33	9.37	4.9	29.1
Tankage														
Fertilizer, mixed														
Fertilizer 1														
Fertilizer 2														
Fertilizer 3														
Fertilizer 4														
Fertilizer 5														
Fertilizer 6														
Fertilizer 7														
Fertilizer 8														
Fertilizer 9														
Fertilizer 10														
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Fertilizer 100														

IX. HOUSE-FURNISHING GOODS

Furnishings:

Blankets, cotton, colored

Blankets, cotton, warp

Blankets, wool

Comforters

Carvers

Knives and forks

Axminster carpets

Brussels carpets

Wilton carpets

Felt-base printed carpet

Felt-base rugs

Linoleum, inlaid

Linoleum, plain

Electric irons, automatic

Electric irons, plain

Electric ironers

Oilcloth, self

Oilcloth, table

Oilcloth, wall

Pails, galvanized iron

Pillowcases

Sewing machines, electric

See footnotes at end of table.

TABLE 25.—Flexibility of commodity prices measured by various criteria—Continued

Code No.	Commodity	Measures of flexibility													
		A	B	C	D	E	F	G	H	I	J	K	L	M	N
1X. HOUSE-FURNISHING GOODS—continued															
Furnishings—Continued.															
694	Sewing machines, treadle.....	4	3	17.8	20.9	14.2	18.0	18.0	14.4	-----	341	833	1248	1.7	0
695	Window shades.....	14	1	34.1	24.5	20.0	27.6	27.6	22.2	27.6	240	533	1147	10.6	36.4
696	Sheets.....	43	18	54.0	72.8	35.0	48.9	48.9	40.2	48.0	230	733	737	2.9	7.0
697	Coal range.....	8	26.3	46.3	5.5	9.5	29.1	29.1	17.7	28.9	129	633	138	2.5	2.4
698	Electric range.....	4	3	31.4	5.5	-----	17.4	16.4	10.8	16.4	129	129	138	5.8	3.6
699	Gas range.....	5	3	30.2	28.2	-----	26.2	25.4	11.7	16.3	129	933	138	1.4	2.2
700	Oil range.....	2	3	23.5	8.5	-----	16.7	16.4	11.7	32.5	930	433	737	8	16.2
701	Tablecloths.....	11	3	33.4	52.6	28.8	33.9	32.6	18.5	18.3	930	1933	138	6.7	0
702	Dinner sets.....	1	1	8.0	52.8	21.8	23.3	18.4	18.5	18.3	123	1933	138	2.6	0
703	Glass napkins.....	3	0	0	33.3	10.0	18.2	18.2	9.1	9.1	1351	933	1248	(1)	0
704	Glass pitchers.....	7	6	0	36.8	17.9	15.6	15.6	14.9	13.1	1351	1248	138	7.4	37.4
705	Plates, granite.....	5	4	16.7	14.3	5.4	14.7	9.2	5.7	9.1	1241	1241	138	3.6	0
706	Cups and saucers, granite.....	5	4	16.7	11.2	-----	13.6	9.2	16.4	9.1	1241	1241	138	3.6	0
707	Tumblers.....	6	3	16.7	50.0	27.2	28.0	24.1	24.6	24.2	129	833	128	10.9	21.8
708	Galvanized-iron tubs.....	50	18	28.1	86.2	39.5	40.8	38.3	36.0	30.3	129	932	138	1.7	24.4
709	Vacuum cleaners.....	8	2	29.7	5.1	4.4	15.6	15.6	5.3	15.6	929	733	138	10.0	0
710	Washing machines.....	8	1	51.4	8.2	13.2	36.3	36.3	16.9	36.3	929	733	138	21.8	0
Furniture:															
712	Metal beds.....	4	4	22.9	13.5	-----	20.7	19.0	10.6	13.2	1049	533	938	3.5	0
713	Wooden beds.....	18	33.4	33.8	33.8	-----	29.8	27.8	23.5	27.5	959	533	1337	7	2.2
714	Bedroom benches.....	5	32.0	27.5	27.1	24.4	27.1	24.4	21.7	24.3	1259	933	1338	8	0
715	Bedroom chairs.....	11	32.4	17.8	32.4	17.8	25.7	24.9	13.0	23.1	1259	533	938	5	3.8
716	Dressers, vanities.....	18	40.5	32.4	32.4	32.4	33.5	32.1	26.8	32.1	659	533	1247	1.6	2.2
717	Mattresses.....	4	34.8	68.9	68.9	39.0	38.7	38.7	35.8	35.9	932	347	1047	1.7	0
718	Bed springs, coil.....	3	9.3	7.8	7.8	-----	8.6	8.6	7.2	6.3	1259	1032	347	3.9	0
719	Buffets, chinases, and servers.....	14	1.9	1.0	1.0	-----	1.8	1.7	1.5	1.6	959	733	1338	9.9	4.6
720	Dining-room chairs.....	12	4.6	13.4	13.4	-----	8.6	6.5	6.9	6.0	1259	733	1338	1.1	5.0
721	Dining-room tables.....	13	1.5	2.8	2.8	-----	2.9	1.9	1.0	1.0	1259	734	1338	1.0	3.2
722	Kitchen cabinets.....	2	25.4	18.2	18.2	-----	21.1	21.1	21.4	20.7	959	733	1338	1.3	1.8
723	Kitchen chairs.....	5	27.1	28.2	28.2	-----	25.6	25.6	22.6	24.1	959	933	1338	2.5	0
724	Electric refrigerators.....	---	---	---	---	---	---	---	---	---	---	---	---	---	---
725	Kitchen tables.....	4	32.2	35.9	35.9	-----	29.5	29.5	16.0	29.5	729	933	1338	2.6	8
726	Living-room chairs.....	3	21.3	31.4	31.4	-----	23.5	23.0	22.5	21.3	1140	1242	1337	2.0	4.2
727	Davenports.....	13	20.3	36.7	36.7	-----	26.2	25.7	24.4	21.0	129	1232	1337	1.9	2.0
728	Living-room tables.....	5	26.0	8.3	8.3	-----	17.9	15.8	6.4	15.8	229	933	1248	1.7	5.4
729	Office chairs, side.....	0	20.5	25.4	25.4	-----	28.7	28.7	3.7	11.8	931	933	1247	(1)	0
730	Office chairs, swivel.....	0	17.7	31.3	31.3	-----	26.0	26.0	3.9	15.1	931	933	1247	(1)	0
731	Flat-top desks.....	1	27.8	31.3	31.3	-----	21.6	20.9	12.2	18.6	931	733	548	1.2	0
732	Typewriter desks.....	0	26.0	11.2	11.2	-----	16.8	13.4	4.2	13.5	231	733	1338	(1)	0

CONCENTRATION OF ECONOMIC POWER

TABLE 25.—Flexibility of commodity prices measured by various criteria—Continued

Commodity		Measures of flexibility													
		A	B	C	D	E	F	G	H	I	J	K	L	M	N
X. MISCELLANEOUS—continued															
Other miscellaneous—Continued.															
777	Toilet soap	1	0	24.7	85.8	7.3	43.3	24.9	7.2	24.9	12.1	12.4	3.8	(4)	0
778	Laundry starch	19	1	36.8	21.1	21.1	13.1	39.7	21.1	36.8	12.2	12.4	3.8	(4)	0
779	Cigars	9	2	6.7	13.7	-10.9	6.4	13.1	+10.8	8.4	12.9	12.4	3.8	(4)	0
780	Plug tobacco	4	4	12.2	-1.1	0	12.1	12.1	0	6.3	12.1	12.4	3.8	(4)	0
781	Smoking tobacco	2	0	15.5	9.1	0	23.9	23.9	23.8	12.1	12.1	12.4	3.8	(4)	0
782	Snuff	2	0	38.5	0	13.2	23.9	23.9	+4.0	0	12.1	12.4	3.8	(4)	0
783	Paraffin	0	0	33.3	81.0	39.4	57.3	55.6	41.9	48.1	12.1	12.4	3.8	(4)	0
784		84	38								12.1	12.4	3.8	(4)	0

"o" are composites as explained below.

The code numbers are those used in the wholesale price bulletins of the Bureau of Labor Statistics, except that items followed by "o" are composites as explained below.

These measures are explained on pp. 166-168 of the text, and also below.

DESCRIPTION OF CRITERIA

A—Number of monthly changes in 95 chances, January 1926 to December 1933.

B—Number of monthly changes in 38 chances, January 1926 to April 1929.

C—Percent of decline from June 1929 to February 1937.

D—Percent increase from depression low to peak of 1937.

E—Average of 1929 and 1937 indexes, less 1932 index, on basis of 1929=100 percent.

F—Percent decrease, average of 1929 peak and 1936 to March 1937 peak to depression low index.

G—Percent decrease, average of 1929 peak and 1936 to March 1937 peak to depression low index.

H—Percent decrease, average of February 1929 and February 1937 to February 1933.

I—Peak month of index, 1929-31.

J—Low month of index, 1929-31.

K—Low month of index, 1929-31.

L—Average change (in index points) per change, January 1926 to April 1929.

M—Average change (in index points) less net change, January 1926 to April 1929.

N—Aggregate change (in index points) less net change, January 1926 to April 1929.

O—These composites include the following individual series (the numbers shown for the individual series in parentheses are their code numbers used in the wholesale price bulletins):

Composite 2c includes (2)—corn, No. 2, yellow; (3)—corn, No. 3, yellow.

Composite 6c includes (6)—wheat, No. 2, red winter, Chicago; (7)—wheat, No. 2, hard; (8)—wheat, No. 2, yellow.

Composite 13c includes (13)—rows, fair to good; (14)—cows, good to choice.

Composite 15c includes (15)—steers, fair to good; (16)—steers, good to choice.

Composite 17c includes (17)—hogs, heavy butchers; (18)—hogs, light butchers.

Composite 19c includes (19)—ewes, native; (21)—wethers, fed.

Composite 22c includes (22)—poultry, live, New York.

Composite 23c includes (23)—poultry, live, Chicago; (23)—poultry, live, New York.

Composite 24c includes (27)—cotton, Galveston; (25)—cotton, New Orleans; (26)—cotton, New York.
 Composite 27c includes (27)—eggs, Boston; (28)—eggs, Chicago; (29)—eggs, Cincinnati; (31)—eggs, New York; (32)—eggs, Philadelphia; (33)—eggs, San Francisco.
 Composite 40c includes (40)—hay, clover; (41)—hay, timothy.
 Composite 50c includes (50)—potatoes, Boston; (56)—potatoes, Chicago; (57)—potatoes, New York.
 Composite 55c includes (58)—wool, grease, cloth; (60)—wool, grease, delaine; (61)—wool, grease, half blood; (62)—wool, grease, medium; (63)—wool, scoured, fine.
 Composite 65c includes (65)—wool, Argentine; (66)—wool, Australian; (67)—wool, Montevideo.
 Composite 68c includes (68)—butter, Boston, extra; (69)—butter, Boston, 1st; (70)—butter, Chicago, extra; (71)—butter, Chicago, extra, 1st; (73)—butter, Chicago, 1st; (74)—butter, Cincinnati; (75)—butter, New Orleans, fancy; (76)—butter, New Orleans, choice; (77)—butter, New York, extra; (78)—butter, New York, 1st; (79)—butter, New York, 2d; (80)—butter, Philadelphia, extra; (81)—butter, Philadelphia, extra, 1st; (82)—butter, Philadelphia, 1st; (83)—butter, St. Louis; (84)—butter, San Francisco, extra; (85)—butter, San Francisco, 1st.
 Composite 86c includes (86)—cheese, Chicago; (87)—cheese, New York; (88)—cheese, San Francisco.
 Composite 103c includes (103)—flour, standard patent, Buffalo; (104)—flour, 1st, clear, Buffalo; (105)—flour, short patents, Kansas City; (106)—flour, straight, Kansas City; (107)—flour, standard patents, Minneapolis; (108)—flour, 2d patents, Minneapolis; (109)—flour, patents, Portland, Oreg.; (110)—flour, shorts, patents, St. Louis; (111)—flour, straight, St. Louis; (112)—flour, standard patents, Toledo.
 Composite 141c includes (141)—beef, fresh, Chicago; (142)—beef, fresh, New York.
 Composite 190c includes (190)—boys shoes; (192)—misses' shoes.
 Composite 194c includes (194)—shoes, calf, butcher; (195)—shoes, calf, 4A; (196)—shoes, cord tip; (198)—shoes, series 1; (199)—shoes, series 2; (200)—shoes, side oxford.
 Composite 201c includes (201)—shoes, kid; (204)—shoes, brown.
 Composite 202c includes (202)—shoes, work; (203)—shoes, elk.
 Composite 205c includes (205)—shoes, blucher, oxford; (207)—patent leather pumps; (210)—shoes, elk, colors.
 Composite 206c includes (206)—shoes, strap; (209)—kid, pumps.
 Composite 212c includes (212)—steer hides, native; (213)—steer hides, Texas.
 Composite 222c includes (222)—leather, oak bends; (223)—leather, oak scoured back; (224)—leather, union back.
 Composite 261c includes (261)—muslin, No. 1, 80 x 92; (262)—muslin, No. 2, 80 x 80; (263)—muslin, No. 3, 80 x 80.
 Composite 270c includes (270)—sheeting, light; (271)—sheeting, heavy.
 Composite 272c includes (272)—sheeting, medium; (274)—sheeting, light.
 Composite 281c includes (281)—yarn, 10/1, north; (282)—yarn, 22/1, north; (283)—yarn, 40's, south.
 Composite 284c includes (284)—yarn, 20/2; (285)—yarn, 40/2.
 Composite 286c includes (286)—rayon, 150, 1st; (286)—rayon, 150, 2d; (287)—rayon, 300, 1st; (288)—rayon, 300, 2d.
 Composite 296c includes (296)—silk, Canton; (300)—silk, Japan, white; (301)—silk, Japan, double extra; (302)—silk, Japan, yellow.
 Composite 303c includes (303)—silk, yarn, 62/1; (304)—silk, yarn, 60/2.
 Composite 306c includes (306)—silk yarn, crepe; (307)—silk yarn, organzine; (308)—silk yarn, tram.
 Composite 318c includes (318)—suitings, serge, 15-ounce; (319)—suitings, serge, 16-ounce; (320)—uniform serge, fine; (321)—uniform serge, medium.
 Composite 325c includes (325)—yarn, half blood; (326)—yarn, fine.
 Composite 341c includes (341)—jute yarn, No. 1; (342)—jute yarn, No. 2.
 Composite 350c includes (350)—retort coke, Alabama; (351)—retort coke, New Jersey; (352)—retort coke, Chicago.
 Composite 359c includes (359)—gasoline, northern Texas; (360)—gasoline, Oklahoma; (361)—gasoline, Pennsylvania.
 Composite 425c includes (425)—iron ore, Bessemer; (426)—iron ore, non-Bessemer.
 Composite 427c includes (427)—pig iron, basic; (428)—pig iron, Bessemer.
 Composite 457c includes (457)—fence wire, annealed; (458)—fence wire, galvanized; (459)—fence wire, galvanized.
 Composite 462c includes (462) to (467)—Passenger cars, 6 series.
 Composite 555c includes (555)—plate glass, 3-8 square feet; (556)—plate glass, 5-10 square feet.
 Composite 567c includes (567)—window glass, A; (568)—window glass, B.
 Composite 574c includes (574)—individual prepared shingles; (575)—prepared roofing, slate.
 Composite 666c includes (666)—fertilizer, Middle Atlantic; (668)—fertilizer, New England; (670)—fertilizer, South Atlantic, other; (671)—fertilizer, South Central and Southwest.
 Composite 667c includes (667)—fertilizer, Middle West; (669)—fertilizer, South Atlantic, 3-8-3.
 Composite 702c includes (702)—dinner sets; (703)—dinner sets, spray.
 Composite 751c includes (751)—rubber amber; (752)—latex crepe.

* No change in price between January 1926 and April 1929.

Source: Bureau of Labor Statistics except for criteria A and F which are furnished by the National Resources Committee.

TABLE 26.—Flexibility of commodity prices measured by various criteria ranked in ten groups for each criterion in order of increasing flexibility
 [Group I. Least flexible. Group X. Most flexible]

Code number	Commodity	Rank for specified measures ¹													
		A	B	C	D	E	F	G	H	I	J	K	L ²	M	N ⁴
I. FARM PRODUCTS															
Grains:															
1	Barley, malting.....	X	X	VIII	X	X	X	X	IX	X	X	VIII	IX	VII	X
2c	Corn ³	X	X	X	X	X	X	X	X	X	X	IX	VIII	VIII	X
4	Oats, No. 2, white.....	X	X	IX	X	X	X	X	X	X	X	VIII	VIII	V	X
5	Rye, No. 2.....	X	X	IX	X	X	X	X	X	X	X	VIII	VIII		X
6c	Wheat ¹	X	X	IX	X	X	X	X	X	X	X	VIII	VIII		IX
Livestock and poultry:															
12	Calves, vealers.....	X	X	IX	IX	IX	IX	X	X	VIII	VII	IX	VI	IX	X
13c	Cows ³	X	X	X	X	IX	X	IX	IX	X	VII	VIII	VII	VIII	X
15c	Steers ¹	X	X	X	X	IX	X	IX	IX	X	VII	VIII	VII	VIII	X
17c	Hogs ¹	IX	X	X	X	IX	X	IX	IX	X	VII	VIII	IX	VII	X
19c	Sheep ¹	X	X	IX	X	IX	IX	IX	VII	VIII	VIII	IX	VIII	VII	X
20	Lambs, western.....	X	X	IX	VIII	IX	IX	IX			VIII	IX	VIII	VII	X
22c	Poultry, live ³	X	X	IX			IX	IX			VIII	IX			
24c	Other farm products:														
	Cotton, middling ¹	X	X	X	X	IX	X	X	X	X	IX	X	IX	VII	X
	Eggs:														
27c	Fresh ¹	X	X	IX	IX	VII	X	X	VIII	IX	V	VII	X	IX	X
30	New Orleans.....														
Apples:															
34	Chicago.....	X	IX	X	VIII	V	X	X	IX	VIII	VII	IX	VIII	X	X
35	New York.....	IX	IX	X	VIII	IX	IX	IX	VII	IX	VII	IX	VIII	X	X
36	Seattle.....	X	X	IX	IX	IV	IX	IX	V	VII	VI	VI	VI	X	X
37	Lemons.....	X	X	IX	IX	VIII	IX	IX	VII	VIII	IX	IX	IX	X	X
38	Oranges.....	IX	X	VIII	VII	VIII	VII	VIII	IX	IX	IX	IX	IX	X	X
39	Alfalfa hay.....	IX	X	VII	X	IX	X	X	VII	IV	X	I	IX	VIII	X
40c	Hay ¹	X	X	I	X	IX	X	X	VII	IV	X				
42	Tops.....	X	X												
ilk:															
43	Chicago.....	VI	VI	VIII	IV	III	VI	VI	IV	VI	VII	VI	V	VI	VIII
44	New York.....	VI	VII	IX	VIII	V	VII	VII	V	IX	III	III	V	VI	X
45	San Francisco.....	IV	IV	V	VI	V	VI	VI	X	V	III	III	V	V	X
46	Peanuts.....	VIII	IX	X	X	X	IX	IX	X	IX	VI	VIII	X	V	IX
47	Alfalfa seed.....	VIII	VIII	VIII	X	X	IX	IX	IX	IX	VI	VIII	X	V	IX
48	Clover seed.....	VIII	VIII	IX	X	X	IX	IX	X	IX	VI	VIII	X	V	IX
49	Flaxseed.....	IX	IX	IX	IX	IX	IX	IX	IX	IX	VI	VIII	IX	IV	V
50	Timothy seed.....	IX	IX	IX	IX	IX	IX	IX	IX	IX	VII	VI	IX	V	II
51	Tobacco, leaf.....	IX	X	IX	IX	VIII	IX	IX	VIII	IX	VII	IX	VI	II	VIII
52	Beans, dried.....	X	X	X	X	X	IX	X	X	IX	VII	VIII	IX		

[illegible]

Footnotes at end of table.

TABLE 26.—Flexibility of commodity prices measured by various criteria ranked in ten groups for each criterion in order of increasing flexibility—Continued

[Group 1. Least flexible. Group X. Most flexible]

Code number	Commodity	Rank for specified measures													
		A	B	C	D	E	F	G	H	I	J	K	L	M	N
1. FOODS—continued															
Fruits and vegetables—Continued.															
127	Dried apricots.....	IX	IX	X	VIII	VIII	IX	IX	IX	IX	VI	IX	I	V	IX
128	Dried peaches.....	VII	III	X	III	II	IX	IX	III	VIII	VI	VIII	I	X	IX
129	Dried currants.....	IX	IX	IX	VIII	VIII	IX	X	IX	VIII	VI	IX	X	VI	IX
130	Dried prunes.....	IX	IX	IX	VIII	VIII	VII	VII	V	VIII	VI	IX	VIII	V	VIII
131	Raisins, seedless.....	IX	VIII	V	VII	I	VIII	IV	III	IV	VI	IX	IV	X	V
132	Bananas.....	VIII	VIII	II	VIII	III	VII	VII	III	IV	VI	IX	IV	X	V
133	Canned asparagus.....	V	V	IV	VI	IV	IV	IV	IV	IV	VI	IX	IV	IV	V
134	Canned baked beans.....	VIII	V	VII	VI	VII	VII	VII	VII	VII	VI	IX	VII	IV	V
135	Canned corn.....	VIII	V	III	IV	I	III	III	I	VII	VI	IX	VII	V	VIII
136	Canned peas.....	VIII	V	III	V	III	IV	IV	III	II	VI	IX	V	V	IX
137	Canned spinach.....	VIII	VII	III	VI	VII	VII	VIII	VIII	VIII	IV	V	X	X	IX
138	Canned string beans.....	VII	V	VIII	IV	IV	VII	VII	V	VI	VII	VIII	VII	IX	VI
139	Canned tomatoes.....	VII	V	VIII	IV	IV	VII	VII	V	VI	VII	VIII	VII	IX	VI
Meats:															
Beef:															
140	Cured.....	IX	IX	X	IX	IX	IX	IX	IX	IX	X	VII	III	VII	X
141c	Fresh ⁶	VIII	VIII	VIII	VIII	VIII	IX	IX	VIII	VIII	VIII	II	VI	VIII	IX
143	Lamb, fresh.....	X	X	VII	IX	VII	IX	IX	VIII	VII	VIII	IX	X	VIII	X
144	Mutton, fresh.....	VIII	X	VII	IX	VII	IX	IX	VIII	VII	VIII	IX	X	VIII	X
145	Bacon.....	VIII	IX	IX	IX	X	IX	X	IX	X	VI	VIII	VII	VI	X
146	Cured pork belly cleared.....	IX	X	X	IX	X	X	X	X	X	VII	VIII	VII	VI	X
147	Cured pork belly rib.....	IX	X	X	IX	X	X	X	X	X	VII	VIII	VII	VI	X
148	Cured hams.....	IX	X	IX	IX	IX	IX	IX	IX	IX	VII	VIII	VII	VI	X
149	Cured hams.....	IX	IX	IX	IX	IX	IX	IX	IX	IX	VII	VIII	VII	VI	X
149	Mess pork.....	IX	IX	IX	IX	IX	IX	IX	IX	IX	VII	VIII	VII	VI	X
150	Pork, fresh, compressed.....	IX	X	X	IX	X	X	X	X	X	VII	VIII	VII	VI	X
151	Veal, fresh.....	IX	X	X	IX	IX	X	X	VIII	VII	VIII	IX	IV	VII	IX
152	Poultry, dressed, Chicago.....	IX	IX	IX	VIII	VI	IX	IX	VII	VIII	VIII	III	X	VI	IX
153	Poultry, dressed, New York.....	X	X	IX	VIII	VI	IX	IX	VII	VIII	VIII	III	X	VI	IX
Other foods:															
154	Ginger ale.....	I	II	III	I	I	I	II	I	I	II	I	X	I	I
155	Grape juice.....	III	I	VIII	V	V	VI	VI	V	VII	V	III	I	(e)	V
156	Plain soda.....	I	I	II	I	II	I	I	II	II	II	VIII	I	(e)	I
157	Cocoa beans.....	X	I	VIII	IX	VI	IX	IX	VII	VIII	VI	I	IX	(e)	I
158	Powdered cocoa.....	III	I	VI	III	III	V	V	IV	V	II	I	VII	(e)	I

[illegible]

Footnotes at end of table.

TABLE 26.—Flexibility of commodity prices measured by various criteria ranked in ten groups for each criterion in order of increasing flexibility—Continued

[Group I. Least flexible. Group X. Most flexible]

Code num- ber	Commodity	Rank for specified measures													
		A	B	C	D	E	F	G	H	I	J	K	L	M	N
III. HIDES AND LEATHER PRODUCTS—continued															
Hides and skins:															
211	Cowhides.....	IX	X	X	X	X	X	X	X	X	X	X	VII	X	X
212c	Steer hides.....	X	X	X	X	X	X	X	X	X	X	X	III	IX	IX
214	Goatskins.....	IX	IX	IX	IX	IX	IX	IX	IX	IX	IX	IX	VIII	IV	VIII
215	Goatskins.....	VIII	VIII	VIII	IX	IX	IX	IX	IX	IX	IX	IX	IX	IX	X
216	Kip skins.....	IX	IX	IX	IX	IX	IX	IX	IX	IX	IX	IX	VII	VII	X
217	Sheepskins.....	IX	IX	IX	IX	IX	IX	IX	IX	IX	IX	IX	VIII	IX	X
Leather:															
218	Chrome leather.....	V	III	VII	VII	VII	VII	VII	VIII	VIII	III	VII	VI	V	I
219	Glazed kid leather.....	VI	VI	VI	VI	V	VII	VII	VI	VII	III	VI	VII	VI	VII
220	Harness leather.....	VII	VI	VII	VII	VIII	VII	VII	VIII	VIII	X	VII	VII	X	IX
221	Side chrome leather.....	VIII	VII	VII	IX	VII	IX	IX	VIII	IX	X	VII	VIII	V	VIII
222c	Sole leather.....	II	VII	IX	IX	II	II	II	III	III	II	IV	III	(6)	I
223	Leather belting.....	II	III	IV	II	II	II	V	II	VI	I	IV	I	V	I
226	Men's gloves.....	I	I	V	IV	III	V	V	III	VI	I	VI	V	VII	I
227	Women's gloves.....	II	II	V	V	III	V	V	III	IV	IX	VI	V	II	V
228	Harness.....	IV	VI	III	IV	III	VI	VI	III	VI	V	VI	VI	II	V
229	Suitcases.....	IV	V	VI	VI	VI	VI	VI	VI	VI	V	V	VI	II	V
230	Traveling bags.....	IV	IV	VI	VI	VI	VI	VI	VI	VI	V	V	VI	II	V
IV. TEXTILES															
Clothing:															
231	Soft collars.....	I	II	IV	IV	VI	V	V	VI	IV	VI	IX	I	X	I
232	Stiff collars.....	I	I	I	VIII	I	I	I	I	I	I	I	I	(6)	I
233	Men's cotton kerchiefs.....			VII	VII	VII	VII	VII		IV	IV	VI	VIII		
234	Women's cotton kerchiefs.....			VI	VII	VII	VII	VII		IV	IV	VI	V		
235	Men's linen kerchiefs.....			IX	VII	VIII	VIII	VIII		IV	IV	VIII	V		
236	Women's linen kerchiefs.....			IX	VII					IV	IV				
Hats:															
237	Finished.....	III	II	VIII				VI	V	VII	IV	III		IX	I
238	Unfinished.....	III	II	VI						VIII	IV	VII		II	II
239	Overalls.....	VII	VII	VIII	VII	IX	VII	VII	VIII	VIII	VIII	VII	VII	III	VII
240	Overcoats.....	II	III	II	II	VI	IV	IV	V	I	VIII	IV		IX	I
241	Dress suits.....	I	I	V	I	I	I	I	I	II	II	I	I	(6)	I
242	Work shirts.....	IV	II	IV	VII	VII	VII	V	VII	VII	IX	VIII	VII	IV	I
243	Boys' 4-piece suits.....	III	I	V	VII	VII	VI	V	VII	VI	IV	VII	I	(6)	I
244	Men's 3-piece suits.....	III	III	IV	VII	VIII	V	V	VII	VI	III	IV	IV	IX	I

TABLE 26.—Flexibility of commodity prices measured by various criteria ranked in ten groups for each criterion in order of increasing flexibility—

Continued

[Group I. Least flexible. Group X. Most flexible]

Code number	Commodity	Rank for specified measures													
		A	B	C	D	E	F	G	H	I	J	K	L	M	N
IV. TEXTILES—continued															
Knit goods—Continued.															
294	Underwear, men's wool, 2-piece	IV	II	IV	III	V	VIII	IV	IV	IV	V	VI	V	X	I
295c	Rayon	V	V	IX	VII	VIII	X	X	X	X	IX	VIII	IX	IX	IV
299c	I v silk	X	IX	X											VIII
Silk yarn:															
303c	Domestic	VII	VII	VIII	III	V	VI	VI	V	VII	VI	IV	IV	III	V
305	Imported	V	IX	X	V	VII	VIII	VII	IX	IX	II	VIII	IX	VIII	V
306c	Thrown	X			V										VIII
Woolen and worsted goods:															
309	Wool broadcloth	IV	IV	VII	VII	VII	VII	VII	VII	VII	IX	VI	VI	IX	V
310	Wool crepe	VI	V	VII	VI	VI	VII	VII	VI	VII	VII	VI	VI	IV	VI
311	Flannel	VI	VI	VII	VII	IX	VII	VII	VII	IX	IV	VI	IX	IX	V
312	Suiting, worsted	V	IV	IX	VIII	IX	VIII	VIII	VII	IX	IV	VIII	IX	IX	V
313	Serge	VI	VI	VI	VII	VII	VI	VI	V	VII	IV	VI	VI	II	V
314	Sicilian cloth	V	V	IV	VI	V	V	V	V	VI	IV	VI	VI	IV	IV
315	Flannel, 7-ounce	IV	IV	VII	V	V	VI	VI		VII	IV	VI	VI	III	IV
Overcoating:															
316	Heavy	V	IV	VI	VIII	VIII	VII	VII	VII	VII	V	VI	VII	IX	VII
317	Top	VI	III	VI	VIII	IX	VII	VII	VII	VII	VIII	VI	V	VI	I
318c	Suiting, serge	VI	VI	VII	VIII	VIII	VII	VII	VIII	VIII	VIII	IX	VII	III	V
322	Uniform serge, unfinished	VI	VI	VII	VIII	VIII	VII	VII	VIII	VIII	VII	IX	VII	II	V
323	Trousing		VI	VII	VIII	VIII	VII	VII	VIII	VIII	VII	VII	VI		V
Yarn:															
324	2/32 stock	VIII	VIII	VIII	VIII	IX	VIII	VIII	IX	VIII	IX	IX	IX	II	VII
325c	Weaving	VIII	VIII	VIII	IX	IX	VIII	VIII	VIII	IX	IX	VIII	VIII	II	VI
Other textile products:															
327	Burlap	X	X	VIII	V	VII	VII	VII	VIII	VIII	X	IX	VIII	VI	X
328	Hemp	IX	VIII	X	VIII	IX	IX	IX	IX	X	X	IX	VIII	IX	X
329	Jute	IX	VIII	X	VIII	IX	IX	IX	IX	X	X	VIII	VIII	IX	X
Artificial leather:															
330	Heavy	IV	IV	IV	IV	II	V	V	II	VI	IV	V	III	III	IV
331	Light	IV	IV	IV	III	II	IV	IV	III	VI	IV	IV	VI	VI	IV
332	Cotton rope	VIII	VII	VIII	VII	VIII	VII	VII	VIII	VIII	VIII	VIII	VIII	VI	VIII
333	Manila rope	IV	VI	VIII	V	V	V	V	VI	V	V	IV	V	VI	IV
334	Sisal rope	IV	IV	VI	IV	V	V	IV	V	V	III	IX	I	VIII	IV
335	Sisal	VII	VII	X	IX	X	X	III	X	X	VI	X	X	VIII	V
336	Cotton thread	II	VII	X	IX	X	X	III	X	X	VI	X	X	II	I

(9)

TABLE 26.—Flexibility of commodity prices measured by various criteria ranked in ten groups for each criterion in order of increasing flexibility—Continued

[Group I. Least flexible. Group X. Most flexible]

Code number	Commodity	Rank for specified measures												M	N
		A	B	C	D	E	F	G	H	I	J	K	L		
VI. METALS AND METAL PRODUCTS—continued															
Agricultural Implements—Continued.															
376	Hoes.....	I	I	IV	IV	III	III	III	III	IV	II	III	I	I	I
377	Hay loader.....	I	II	II	III	III	II	II	III	II	VI	II	III	II	I
378	Hay mower.....	I	II	I	IV	IV	II	I	III	II	VIII	I	III	II	I
379	Corn picker.....	I	I	I	I	II	I	I	II	II	I	I	III	IV	I
380	Corn planter.....	I	I	I	II	III	III	III	IV	III	III	IX	III	IV	I
381	Tractor plow.....	I	I	I	IV	IV	IV	IV	IV	IV	VI	II	I	VIII	I
382	1-horse plow.....	II	V	III	IV	IV	III	III	IV	III	III	IX	III	V	IV
383	2-horse plow.....	II	II	III	IV	V	IV	IV	V	III	II	II	I	II	IV
384	Pump.....	I	I	III	IV	III	IV	II	III	III	II	II	III	II	I
385	Hand rake.....	I	I	III	IV	III	II	I	III	III	II	II	III	III	I
386	Self-dump rake.....	I	II	II	III	IV	II	II	IV	III	VI	II	III	IV	I
387	Side delivery rake.....	I	II	I	III	IV	II	II	IV	III	I	I	III	IV	I
388	Cream separator.....	II	III	II	III	III	II	II	IV	III	III	II	II	II	I
389	Corn sheller.....	I	I	I	I	III	III	I	III	III	II	I	I	II	I
390	Shovels.....	II	III	II	III	III	III	III	III	II	V	IV	I	I	I
391	Spades.....	I	I	III	VI	III	III	III	III	III	I	I	I	II	I
392	Manure spreader.....	I	I	II	III	III	II	I	III	III	II	II	III	II	I
393	Grain thresher.....	I	II	II	III	II	II	I	II	II	VI	II	III	III	I
394	Tractor.....	I	I	III	II	IV	II	II	IV	III	IV	II	I	II	I
395	10-20 horsepower.....	II	I	V	IV	IV	II	IV	IV	III	IV	III	III	III	I
396	Wagon, 2-horse.....	II	I	III	III	IV	III	III	III	III	IX	III	V	I	I
397	Windmill.....	II	III	II	III	IV	II	II	III	III	I	I	I	I	I
398	Iron and steel:	I	I	II	II	II	I	I	II	II	I	I	III	III	I
399	Angle bars.....	I	I	IV	VII	IV	I	VI	IV	III	II	IV	I	I	I
400	Augers.....	II	I	I	I	I	VI	I	I	III	II	I	I	I	I
401	Axes.....	II	I	I	I	IV	I	I	I	III	II	I	I	I	I
402	Bar iron.....	VI	V	II	VI	VI	V	IV	VI	V	VI	II	IV	V	I
403	Chicago.....	I	IV	I	I	II	I	I	II	V	I	VI	VI	I	VII
404	Pittsburgh.....	VII	VII	III	VII	VIII	VI	VI	VII	V	V	VI	IV	VI	VII
405	Reinforcing bars.....	VII	VII	IV	VII	VII	V	V	VII	V	V	III	IV	IV	I
406	Merchant bars.....	VII	VII	III	VII	VII	V	V	VII	V	VIII	II	IV	IV	I
407	Steel sheet bars.....	VI	VII	V	V	VII	VI	VI	VII	V	VI	II	IV	IV	I
408	Cold finished bars.....	VII	VIII	V	VII	VII	VI	VI	VII	V	V	III	IV	IV	I
409	Steel barrels.....	III	VI	V	VI	VI	IV	V	VI	V	VII	II	I	I	I
408	Steel billets.....	VI	VI	V	V	VI	IV	V	VI	V	VII	II	IV	IV	I

TABLE 26.—Flexibility of commodity prices measured by various criteria ranked in ten groups for each criterion in order of increasing flexibility—Continued

(Group I. Least flexible. Group X. Most flexible)

Code number	Commodity	Rank for specified measures													
		A	B	C	D	E	F	G	H	I	J	K	L	M	N
VI. METALS AND METAL PRODUCTS—continued															
Nonferrous Metals:															
469	Aluminum.....	IV	VI	II	I	I	II	II	I	I	II	I	I	I	I
470	Antimony.....	X	IV	VI	X	X	IX	IX	X	IX	VI	IX	VII	VIII	IX
471	Babbitt metal.....	IX	III	III	VIII	IX	VII	VII	VIII	VII	IX	VIII	IX	IV	IV
472	Copper, electrolytic.....	IX	X	IX	IX	IX	IX	IX	IX	IX	IX	VIII	IX	IV	IV
473	Lead, soft.....	IX	III	I	I	I	I	I	I	I	IX	I	I	VII	IX
474	Nickel, cathode.....	VIII	VIII	VIII	VIII	VIII	VIII	VIII	VIII	VIII	VIII	IX	IX	IV	IV
475	Lead pipe.....	IX	X	VIII	VIII	VIII	VIII	VIII	VIII	VIII	VIII	IX	IX	IV	IV
476	Mercury.....	IX	X	VIII	VIII	VIII	VIII	VIII	VIII	VIII	VIII	IX	IX	IV	IV
477	Brass rods.....	VIII	VIII	IX	IX	IX	IX	IX	IX	IX	IX	IX	IX	III	VII
478	Copper rods.....	VIII	VIII	IX	IX	IX	IX	IX	IX	IX	IX	IX	IX	III	VII
479	Brass sheets.....	VIII	VIII	VIII	VIII	VIII	VIII	VIII	VIII	VIII	VIII	IX	IX	III	VII
480	Copper sheets.....	VIII	VIII	VIII	VIII	VIII	VIII	VIII	VIII	VIII	VIII	IX	IX	III	VII
481	Zinc sheets.....	VI	X	III	V	IV	IV	III	IV	III	IV	VI	X	II	VII
482	Silver.....	X	VIII	VIII	VIII	VIII	VIII	VIII	IX	VIII	IX	VIII	IX	II	VII
483	Solder.....	VIII	VIII	VIII	VIII	VIII	VIII	VIII	IX	VIII	IX	VIII	IX	II	VII
484	Tin.....	X	VIII	IX	VIII	X	IX	X	X	IX	X	IX	IX	II	VII
485	Brass tubes.....	VIII	VIII	IX	VIII	VIII	VIII	VIII	VIII	VIII	IX	VII	IX	II	VII
486	Brass wire.....	VIII	VIII	IX	VIII	VIII	VIII	VIII	VIII	VIII	IX	VII	IX	II	VII
487	Copper wire.....	VIII	VIII	IX	VIII	VIII	VIII	VIII	VIII	VIII	IX	VII	IX	II	VII
488	Zinc pig.....	IX	IX	IX	IX	X	IX	IX	X	IX	VI	IX	IX	II	VIII
Plumbing and heating:															
489	Heating boilers.....		VII	V	V	IV	V	V	V	VI	VIII	I	V	VI	VIII
490	Range boilers.....	VI	VIII	I	VI	VII	VIII	VII	IV	II	II	VI	III	VII	VIII
491	Water closets.....	VII	VI	X	V	IV	V	V	VIII	IX	V	VII	V	VII	V
492	Lavatories.....	VII	VII	V	V	VIII	V	V	IV	V	IX	II	V	II	V
493	Radiators.....	VI	VII	VII	VII	VIII	VII	VII	VIII	VII	VI	IX	I	VII	VII
494	Sinks.....	V	V	V	III	II	VI	III	VIII	V	VI	VI	I	V	IV
495	Bathtubs.....	VI	V	V	V	IV	VI	V	V	VII	V	VI	V	V	IV
496	Laundry tubs.....	IV	IV	V	V	V	VI	VI	V	VII	VIII	II	V	II	IV
VII. BUILDING MATERIALS															
Brick and Tile:															
497	Concrete blocks.....														
498	Common brick.....	I	II	V	II	II	III	III	II	III	I	III	VI	X	I
499	Face brick.....	VII	III	IV	III	VII	III	IV	IV	IV	VIII	V	V	IX	IV
500	Fire brick.....	III	VI	III	VI	IV	III	III	IV	IV	VII	IV	VI	IV	V

[illegible]

Footnotes at end of table.

TABLE 26.—Flexibility of commodity prices measured by various criteria ranked in ten groups for each criterion in order of increasing flexibility—

Continued

[Group I. Least flexible. Group X. Most flexible]

Code number	Commodity	Rank for specified measures													
		A	B	C	D	E	F	G	H	I	J	K	L	M	N
VIII. CHEMICALS AND DRUGS—continued															
Drugs and pharmaceuticals:															
635	Citric acid.....	VI	V	VI	I	III	III	IV	III	IV	III	I	X	I	IV
636	Tartaric acid.....	VII	VII	VIII	IV	IX	VI	V	VI	VII	V	III	III	IV	IV
637	Grain alcohol.....	V	VI	II	VI	III	IV	VI	III	V	VII	IV	II	II	IV
638	Caffeine.....	IX	IX	VII	IV	VI	VII	VI	VII	VII	V	VIII	X	II	VIII
639	Camphor.....	VII	VIII	V	III	IV	IV	VII	IV	VI	VI	IX	I	III	V
640	Castor oil.....	VII	IV	VII	III	VII	VII	VII	IV	VI	VI	IX	I	VI	VI
641	Chlorine, liquid.....	II	I	II	III	IV	II	VI	V	IV	VIII	IV	I	V	VI
642	Chloroform.....	VII	VII	VIII	IV	IV	VII	V	I	I	VIII	IV	I	VII	V
643	Cream of tartar.....	II	IV	I	I	I	I	I	I	IX	IX	III	I	VI	VI
644	Epsom salts.....	VII	VIII	V	X	X	VIII	VIII	VI	III	I	VI	I	IX	I
645	Glycerin, C. P.....	IV	I	VII	I	VI	VII	VII	I	III	I	IX	I	VI	VI
646	Iodine.....	IX	X	VII	I	VI	VII	VII	II	VI	IX	III	I	IX	V
647	Menthol.....	III	I	II	II	II	II	II	II	II	II	III	I	VII	II
648	Opium.....	I	III	III	I	I	I	I	I	II	I	III	I	II	IV
649	Hydrogen peroxide.....	V	VI	I	I	I	II	II	II	II	II	III	I	VII	VI
650	Phenol.....	V	III	VI	I	I	II	II	II	II	II	III	I	X	V
651	Potassium iodide.....	IV	III	I	VII	IV	V	VI	IV	III	II	VI	X	IX	I
652	Quinine sulphate.....	V	III	V	II	I	III	IV	I	III	II	V	X	IX	V
653	Sodium phosphate.....	V	I	I	II	II	VI	VII	II	VII	VI	III	X	IX	V
654	Strychnine.....	IV	III	VIII	IV	II	II	II	II	II	II	III	I	III	V
655	Zinc chloride.....	IV	VI	III	I	II	II	II	II	II	III	I	I	IX	V
Fertilizer materials:															
656	Ammonium sulphate.....	VIII	VIII	X	VII	VIII	IX	IX	IX	IX	IX	IX	IV	IV	VIII
657	Bones, ground.....	VII	VIII	VIII	VII	VIII	VIII	VIII	VIII	VII	II	X	VII	VIII	V
658	Phosphate rock.....	III	IV	I	I	I	III	I	I	I	I	III	V	IV	V
659	Kainit, 20 percent.....	III	IV	II	IV	II	V	V	II	II	I	I	V	III	I
660	Manure salts, 20 percent.....	III	III	I	IV	II	V	V	II	I	I	I	V	II	I
661	Muriate of potash, 80 percent.....	III	III	II	IV	II	V	V	II	I	I	I	I	I	I
662	Sulfate of potash, 90 percent.....	III	III	II	II	I	III	II	I	I	I	I	I	I	I
663	Sodium nitrate.....	VIII	IX	VII	III	III	IV	IV	III	VI	VIII	IX	V	V	VIII
664	Superphosphate.....	VIII	VII	VII	IV	IV	VI	VI	IV	VI	VIII	VII	IX	VIII	IX
665	Tankage.....	VIII	VII	X	X	X	X	X	X	X	VIII	VII	IX	VIII	IX
Fertilizer, mixed:															
666c	Fertilizer.....	VII	VII	VI	IV	IV	V	V	IV	V	VII	VI	III	IV	VII
667c	Fertilizer.....	V	VI	VI	IV	V	V	V	V	VI	VII	V	VII	IV	VII

IX. HOUSE FURNISHING GOODS

Furnishings:											
Blankets:											
672	Cotton, colored.	VIII	VII	VI	VI	VI	VI	VI	VI	VI	VI
673	Cotton, warp.	VII	VII	VII	VII	VII	VII	VII	VII	VII	VII
674	Wool.	VII	VII	VII	VII	VII	VII	VII	VII	VII	VII
675	Carvers.	VII	VII	VII	VII	VII	VII	VII	VII	VII	VII
676	Knives and forks.	VII	VII	VII	VII	VII	VII	VII	VII	VII	VII
677	Annister carpets.	VII	VII	VII	VII	VII	VII	VII	VII	VII	VII
678	Brussels carpets.	VII	VII	VII	VII	VII	VII	VII	VII	VII	VII
679	Wilton carpets.	VII	VII	VII	VII	VII	VII	VII	VII	VII	VII
680	Felt base printed carpet.	VII	VII	VII	VII	VII	VII	VII	VII	VII	VII
681	Felt base rugs.	VII	VII	VII	VII	VII	VII	VII	VII	VII	VII
682	Linoleum.	VII	VII	VII	VII	VII	VII	VII	VII	VII	VII
683	Inkald.	VII	VII	VII	VII	VII	VII	VII	VII	VII	VII
684	Plain.	VII	VII	VII	VII	VII	VII	VII	VII	VII	VII
685	Electric irons:	VII	VII	VII	VII	VII	VII	VII	VII	VII	VII
686	Automatic.	VII	VII	VII	VII	VII	VII	VII	VII	VII	VII
687	Plain.	VII	VII	VII	VII	VII	VII	VII	VII	VII	VII
688	Electric ironers.	VII	VII	VII	VII	VII	VII	VII	VII	VII	VII
689	Oilcloth.	VII	VII	VII	VII	VII	VII	VII	VII	VII	VII
690	Shelf.	VII	VII	VII	VII	VII	VII	VII	VII	VII	VII
691	Table.	VII	VII	VII	VII	VII	VII	VII	VII	VII	VII
692	Wail.	VII	VII	VII	VII	VII	VII	VII	VII	VII	VII
693	Pails, galvanized iron.	VII	VII	VII	VII	VII	VII	VII	VII	VII	VII
694	Pillowcases.	VII	VII	VII	VII	VII	VII	VII	VII	VII	VII
695	Sewing machines:	VII	VII	VII	VII	VII	VII	VII	VII	VII	VII
696	Electric.	VII	VII	VII	VII	VII	VII	VII	VII	VII	VII
697	Treadle.	VII	VII	VII	VII	VII	VII	VII	VII	VII	VII
698	Window shades.	VII	VII	VII	VII	VII	VII	VII	VII	VII	VII
699	Sheets.	VII	VII	VII	VII	VII	VII	VII	VII	VII	VII
700	Coal range.	VII	VII	VII	VII	VII	VII	VII	VII	VII	VII
701	Electric range.	VII	VII	VII	VII	VII	VII	VII	VII	VII	VII
702	Gas range.	VII	VII	VII	VII	VII	VII	VII	VII	VII	VII
703	Oil range.	VII	VII	VII	VII	VII	VII	VII	VII	VII	VII
704	Tablecloths.	VII	VII	VII	VII	VII	VII	VII	VII	VII	VII
705	Dinner sets.	VII	VII	VII	VII	VII	VII	VII	VII	VII	VII
706	Glass napkins.	VII	VII	VII	VII	VII	VII	VII	VII	VII	VII
707	Glass pitchers.	VII	VII	VII	VII	VII	VII	VII	VII	VII	VII
708	Plates, granite.	VII	VII	VII	VII	VII	VII	VII	VII	VII	VII
709	Cups and saucers, gr.	VII	VII	VII	VII	VII	VII	VII	VII	VII	VII
710	Tumblers.	VII	VII	VII	VII	VII	VII	VII	VII	VII	VII
711	Galvanized iron tubs.	VII	VII	VII	VII	VII	VII	VII	VII	VII	VII
	Vacuum cleaners.	VII	VII	VII	VII	VII	VII	VII	VII	VII	VII
	Washing machines.	VII	VII	VII	VII	VII	VII	VII	VII	VII	VII

Footnotes at end of table.

[illegible]

Footnotes at end of table.

Source: Bureau of Labor Statistics except for criteria A and E which are furnished by the National Resources Committee.

TABLE 26.—*Flexibility of commodity prices measured by various criteria ranked in ten groups for each criterion in order of increasing flexibility—Continued*

DESCRIPTION OF CRITERIA AND DISTRIBUTION OF SERIES

[Wholesale commodity price indexes of the Bureau of Labor Statistics, used in each measure, are divided into 10 groups, as nearly equal in number as possible, with items in group I showing least flexibility, and group X the greatest flexibility]

Group	Group limits	Number of items	Group	Group limits	Number of items
Number of monthly changes in 95 chances, January 1926–December 1933			Number of monthly changes in 39 chances, January 1926–April 1929		
	<i>A</i>	619		<i>B</i>	652
I	0 to 4.....	75	I	0.....	75
II	5 to 7.....	61	II	1.....	40
III	8 to 11.....	60	III	2 to 3.....	95
IV	12 to 16.....	61	IV	4 to 5.....	63
V	17 to 22.....	59	V	6 to 8.....	58
VI	23 to 34.....	56	VI	9 to 13.....	60
VII	35 to 49.....	62	VII	14 to 20.....	63
VIII	50 to 77.....	62	VIII	21 to 30.....	65
IX	78 to 92.....	63	IX	31 to 37.....	58
X	93 to 95.....	60	X	38 to 39.....	75
Percent of decline from June 1929 to February 1933			Percent increase from depression low to peak of 1937		
	<i>C</i>	664		<i>D</i>	643
I	No change and increases.....	67	I	Decreases to 4.3 percent increase.....	65
II	0.1 to 10.9.....	67	II	4.4 to 12.0.....	62
III	11.0 to 17.9.....	68	III	12.1 to 23.2.....	65
IV	18.0 to 25.2.....	67	IV	23.3 to 33.2.....	65
V	25.3 to 31.3.....	65	V	33.3 to 45.7.....	64
VI	31.4 to 37.5.....	67	VI	45.8 to 57.0.....	63
VII	37.6 to 43.9.....	64	VII	57.1 to 77.4.....	66
VIII	44.0 to 50.9.....	68	VIII	77.5 to 101.0.....	62
IX	51.0 to 58.9.....	65	IX	101.1 to 172.0.....	64
X	59.0 to 85.3.....	66	X	172.1 to 927.2.....	67
Average of 1929 and 1937 indexes, less 1932 index, on basis of 1929=100 percent			Percent decrease, average of 1929 and 1937 peaks to depression low index		
	<i>E</i>	617		<i>F</i>	640
I	-20.6 to 0.4.....	61	I	Increases to 8.5 percent decrease.....	63
II	0.5 to 7.5.....	60	II	8.6 to 16.7.....	65
III	7.8 to 12.8.....	62	III	16.8 to 23.1.....	65
IV	13.0 to 17.5.....	61	IV	23.2 to 28.0.....	63
V	17.6 to 23.2.....	63	V	28.1 to 33.6.....	62
VI	23.3 to 27.4.....	62	VI	33.7 to 39.7.....	65
VII	27.5 to 32.9.....	60	VII	39.8 to 46.3.....	65
VIII	32.2 to 39.4.....	62	VIII	46.4 to 57.3.....	65
IX	39.5 to 47.5.....	63	IX	57.4 to 65.9.....	64
X	47.9 to 81.8.....	63	X	66.0 to 90.0.....	63
Percent decrease, average of 1929 peak and 1936–March 1937 peak, to depression low			Percent decrease from average of 1929 and 1937 to 1932		
	<i>G</i>	655		<i>H</i>	652
I	Increases to 7.8 percent decrease.....	65	I	28.5 increase to 0.4 decrease.....	66
II	7.9 to 15.3.....	65	II	0.5 to 7.4.....	63
III	15.4 to 20.9.....	66	III	7.5 to 12.7.....	64
IV	21.0 to 27.0.....	66	IV	12.8 to 18.2.....	67
V	27.1 to 32.7.....	65	V	18.3 to 23.4.....	66
VI	32.8 to 38.5.....	66	VI	23.5 to 28.5.....	64
VII	38.6 to 45.4.....	65	VII	28.6 to 34.8.....	66
VIII	45.5 to 55.8.....	65	VIII	34.9 to 41.4.....	64
IX	55.9 to 65.4.....	68	IX	41.5 to 51.6.....	67
X	65.5 to 89.9.....	64	X	51.7 to 81.1.....	65

See footnotes at end of table.

TABLE 26.—*Flexibility of commodity prices measured by various criteria ranked in ten groups for each criterion in order of increasing flexibility—Continued*

DESCRIPTION OF CRITERIA AND DISTRIBUTION OF SERIES—Continued

Group	Group limits	Number of items	Group	Group limits	Number of items
Percent decrease, average of February 1929 and February 1937 to February 1933			Peak month of index, 1929-31		
	<i>I</i>	644		<i>J</i>	656
I	Increases to 1.6 decrease.....	62	I	December 1931.....	71
II	1.7 to 10.0.....	63	II	December 1930 to November 1931.....	61
III	10.1 to 16.3.....	65	III	June 1930 to November 1930.....	59
IV	16.4 to 21.0.....	66	IV	January 1930 to May 1930.....	61
V	21.1 to 26.2.....	66	V	November 1929 to December 1929.....	60
VI	26.3 to 33.3.....	64	VI	September 1929 to October 1929.....	72
VII	33.4 to 40.1.....	67	VII	June 1929 to August 1929.....	72
VIII	40.2 to 48.5.....	64	VIII	April 1929 to May 1929.....	67
IX	48.6 to 57.5.....	64	IX	March 1929.....	50
X	57.6 to 86.8.....	63	X	January 1929 to February 1929.....	83
Low month of depression 1932-34			Peak month of index 1936-38		
	<i>K</i>	656		<i>L</i>	650
I	December 1934.....	80	I	December 1938.....	158
II	December 1933 to November 1934.....	56	II	(?).....	—
III	August 1933 to November 1933.....	50	III	July 1938 to November 1938.....	40
IV	June 1933 to July 1933.....	88	IV	April 1938 to June 1938.....	57
V	May 1933.....	52	V	December 1937 to March 1938.....	61
VI	April 1933.....	71	VI	September 1937 to November 1937.....	67
VII	March 1933.....	40	VII	June 1937 to August 1937.....	73
VIII	December 1932 to February 1933.....	82	VIII	April 1937 to May 1937.....	62
IX	July 1932 to November 1932.....	78	IX	January 1937 to March 1937.....	71
X	January 1932 to June 1932.....	59	X	January 1936 to December 1936.....	61
Average change (index points) per change, January 1926-April 1929			Aggregate change (index points) less net change, January 1926-April 1929		
	<i>M</i>	577		<i>N</i>	652
I	0.0 to 1.6.....	56	I	0.0.....	198
II	1.7 to 2.2.....	60	II	(?).....	—
III	2.3 to 2.6.....	58	III	(?).....	—
IV	2.7 to 3.2.....	59	IV	0.1 to 0.8.....	65
V	3.3 to 3.8.....	57	V	9 to 17.....	65
VI	3.9 to 4.5.....	54	VI	18 to 28.....	61
VII	4.6 to 5.6.....	58	VII	29 to 45.....	65
VIII	5.7 to 6.7.....	60	VIII	46 to 79.....	66
IX	6.8 to 8.9.....	57	IX	80 to 151.....	67
X	9.0 to 34.7.....	58	X	152 up.....	65

¹ The code numbers are those used in the wholesale price bulletins of the Bureau of Labor Statistics, except that items followed by "c" are composites as explained below.

² These measures are explained on pages 166-168 of the text, and also at the end of this table. See end of table.

³ These composites include the following individual series (The numbers shown for the individual series in parentheses are their code numbers used in the wholesale price bulletins):

Composite 2c includes: (2) Corn, No. 2, yellow; (3) Corn, No. 3, yellow.
Composite 6c includes: (6) Wheat, No. 2, red winter, Chicago; (7) Wheat, No. 2, hard; (8) Wheat, No. 1, northern spring; (9) Wheat, No. 2, dark northern spring; (10) Wheat, No. 1, hard white; (11) Wheat, No. 2, red winter, St. Louis.

Composite 13c includes: (13) Cows, fair to good; (14) cows, good to choice.
Composite 15c includes: (15) Steers, fair to good; (16) Steers, good to choice.
Composite 17c includes: (17) Hogs, heavy butchers; (18) Hogs, light butchers.
Composite 19c includes: (19) Ewes, native; (21) Wethers, fed.
Composite 22c includes: (22) Poultry, live, Chicago; (23) Poultry, live, New York.
Composite 24c includes: (24) Cotton, Galveston; (25) Cotton, New Orleans; (26) Cotton, New York.
Composite 27c includes: (27) Eggs, Boston; (28) Eggs, Chicago; (29) Eggs, Cincinnati; (31) Eggs, New York; (32) Eggs, Philadelphia; (33) Eggs, San Francisco.
Composite 40c includes: (40) Hay, clover; (41) Hay, Timothy.
Composite 55c includes: (55) Potatoes, Boston; (56) Potatoes, Chicago; (57) Potatoes, New York.
Composite 59c includes: (59) Wool, grease, cloth; (60) Wool, grease, delaine; (61) Wool, grease, half blood; (62) Wool, grease, medium; (63) Wool, scoured, fine.

Footnotes continued on p. 210.

TABLE 26.—*Flexibility of commodity prices measured by various criteria ranked in ten groups for each criterion in order of increasing flexibility—Continued*

Composite 65c includes: (65) Wool, Argentine; (66) Wool, Australian; (67) Wool, Montevideo.

Composite 68c includes: (68) Butter, Boston, extra; (69) Butter, Boston, 1st; (70) Butter, Boston, 2nd; (71) Butter, Chicago, extra; (72) Butter, Chicago, extra, 1st; (73) Butter, Chicago, 1st; (74) Butter, Cincinnati; (75) Butter, New Orleans, fancy; (76) Butter, New Orleans, choice; (77) Butter, New York, extra, (78) Butter, New York, 1st; (79) Butter, New York, 2nd; (80) Butter, Philadelphia, extra; (81) Butter, Philadelphia, extra 1st; (82) Butter, Philadelphia, 1st; (83) Butter, St. Louis; (84) Butter, San Francisco, extra; (85) Butter, San Francisco.

Composite 86c includes: (86) Cheese, Chicago; (87) Cheese, New York; (88) Cheese, San Francisco.

Composite 103c includes: (103) Flour, standard patent, Buffalo; (104) Flour, 1st, clear, Buffalo; (105) Flour short patents, Kansas City; (106) Flour, straight, Kansas City; (107) Flour, standard patents, Minneapolis; (108) Flour, 2nd patents, Minneapolis; (109) Flour, patents, Portland, Ore.; (110) Flour, shorts, patents, St. Louis (111) Flour, straights, St. Louis; (112) Flour, standard patents, Toledo.

Composite 141c includes: (141) Beef, fresh, Chicago; (142) Beef, fresh, New York.

Composite 190c includes: (190) Boys' shoes; (192) Misses' shoes.

Composite 194c includes: (194) Shoes, calf, blucher; (195) Shoes, calf, 4A; (196) Shoes, cord tip; (198) shoes, series 1; (199) Shoes, series 2; (200) Shoes, side oxford.

Composite 201c includes: (201) Shoes, kid; (204) Shoes, brown.

Composite 202c includes: (202) Shoes, work; (203) Shoes, elk.

Composite 205c includes: (205) Shoes, blucher, oxford; (207) Patent leather pumps; (210) Shoes, elk, colors.

Composite 206c includes: (206) Shoes, strap; (209) Kid pumps.

Composite 212c includes: (212) Steer hides, native; (213) Steer hides, Texas.

Composite 222c includes: (222) Leather, oak bends; (223) Leather, oak scoured back; (224) Leather, union back.

Composite 261c includes: (261) Muslin, No. 1, 80x92; (262) Muslin, No. 2, 80x80; (263) Muslin, No. 3, 80x80.

Composite 270c includes: (270) Sheeting, light; (271) Sheeting, heavy.

Composite 272c includes: (272) Sheeting, brown; (273) Sheeting, medium; (274) Sheeting, light.

Composite 281c includes: (281) Yarn, 10/1, north; (282) Yarn, 22/1, north; (283) Yarn, 40's, south.

Composite 284c includes: (284) Yarn, 20/2; (285) Yarn, 40/2.

Composite 295c includes: (295) Rayon, 150, 1st; (296) Rayon, 150, 2nd; (297) Rayon, 300, 1st; (298) Rayon, 300, 2nd.

Composite 299c includes: (299) Silk, Canton; (300) Silk, Japan, white; (301) Silk, Japan, double extra; (302) Silk, Japan, yellow.

Composite 303c includes: (303) Silk yarn, 62/1; (304) Silk yarn, 60/2.

Composite 306c includes: (306) Silk yarn, crepe; (307) Silk yarn, organzine; (308) Silk yarn, tram.

Composite 318c includes: (318) Suitings, serge, 15-ounce; (319) Suitings, serge, 16-ounce; (320) Uniform serge, fine; (321) Uniform serge, medium.

Composite 325c includes: (325) Yarn, half blood; (326) Yarn, fine.

Composite 341c includes: (341) Jute yarn, No. 1; (342) Jute yarn, No. 2.

Composite 350c includes: (350) Retort coke, Alabama; (351) Retort coke, New Jersey; (352) Retort coke, Chicago.

Composite 359c includes: (359) Gasoline, Northern Texas; (360) Gasoline, Oklahoma; (361) Gasoline, Pennsylvania.

Composite 425c includes: (425) Iron ore, Bessemer; (426) Iron ore, non-Bessemer.

Composite 427c includes: (427) Pig iron, basic; (428) Pig iron, Bessemer.

Composite 457c includes: (457) Fence wire, annealed; (458) Fence wire, barbed, galvanized; (459) Fence wire galvanized.

Composite 462c includes: (462) to (467) passenger cars, 6 series.

Composite 565c includes: (565) Plate glass, 3-5 square feet; (566) Plate glass, 5-10 square feet.

Composite 567c includes: (567) Window glass, A; (568) Window glass, B.

Composite 574c includes: (574) Individual prepared shingles; (575) Prepared roofing, medium; (576) prepared roofing, slate.

Composite 666c includes: (666) Fertilizer, Middle Atlantic; (668) Fertilizer, New England; (670) Fertilizer, South Atlantic, other; (671) Fertilizer, South Central and Southwest.

Composite 667c includes: (667) Fertilizer, Middle West; (669) Fertilizer, South Atlantic, 3-8-3.

Composite 702c includes: (702) Dinner sets; (703) Dinner sets, spray.

Composite 751c includes: (751) Rubber, amber; (752) Latex crepe.

³ Groups I and II were combined for criterion L and are indicated as group I.

⁴ Groups I, II, and III were combined for criterion N and are indicated as group I.

⁵ No change in price between January 1926 and April 1929.

TABLE 27.—*Correlation table of commodities distributed according to their ranks by two criteria of wholesale price flexibility*

[Percent of decline, 1929-33, compared with percent of recover, 1933-37. Commodities classified in 10 groups—group I least flexible, group X most flexible]

		CRITERION D										
Group		I	II	III	IV	V	VI	VII	VIII	IX	X	Total
CRITERION C	X.....	1		1		2	3	2	6	8	42	65
	IX.....		1	1			1	6	15	28	13	65
	VIII.....		1	5	5	4	3	14	10	20	5	67
	VII.....	2	1	3	1	10	10	13	13	4		57
	VI.....	3	5	7	9	4	12	9	8	3	4	64
	V.....	4	8	6	9	12	13	7	3		1	63
	IV.....	3	6	10	13	13	8	8	4			65
	III.....	9	11	11	12	13	8	3			1	68
	II.....	12	14	16	9	3	3	2	3		1	63
	I.....	31	16	5	5	3	2	2			1	65
Total.....		65	63	65	63	64	63	66	62	63	68	642

Source: Criterion C—Bureau of Labor Statistics. Criterion D—Bureau of Labor Statistics.

DESCRIPTIONS OF CRITERIA OF WHOLESALE PRICE FLEXIBILITY

Criterion C.—Percent decline from June 1929 to February 1933:

Group—	Percent decline
I.....	Increase and no change
II.....	0.1-10.9
III.....	11.0-17.9
IV.....	18.0-25.2
V.....	25.3-31.3
VI.....	31.4-37.5
VII.....	37.6-43.9
VIII.....	44.0-50.9
IX.....	51.0-58.9
X.....	59.0-85.3

Criterion D.—Percent increase from depression low to peak of 1937:

Group—	Percent increase
I.....	Decrease to 4.3 increase
II.....	4.4-12.0
III.....	12.1-23.2
IV.....	23.3-33.2
V.....	33.3-45.7
VI.....	45.8-57.0
VII.....	57.1-77.4
VIII.....	77.5-101.0
IX.....	101.1-172.0
X.....	172.1-927.2

TABLE 28.—*Correlation table of commodities distributed according to their ranks by two criteria of wholesale price flexibility*

[Timing of predepression peak (1929-31) compared with timing of depression low (1932-34). Commodities classified in 10 groups—group I least flexible, group X most flexible]

CRITERION K

CRITERION J	Group	I	II	III	IV	V	VI	VII	VIII	IX	X	Total
	X.....	2	6	2	4	2	15	7	12	19	16	85
	IX.....	2	1	3	3	4	3	8	11	10	4	49
	VIII.....	7	4	6	11	3	4	6	12	10	3	66
	VII.....	2	1	2	12	10	13	3	15	10	4	72
	VI.....	6	12	4	4	5	5	2	14	10	10	72
	V.....	3	4	8	10	4	11	3	6	6	5	60
	IV.....	2	5	3	7	12	12	4	5	5	6	61
	III.....	7	4	4	18	4	4	4	5	5	4	59
	II.....	12	6	8	16	7	3	3	2	-----	4	61
	I.....	37	13	10	3	1	1	-----	-----	3	3	71
Total.....		80	56	50	88	52	71	40	82	78	59	656

Source: Criterion K—Bureau of Labor Statistics. Criterion J—Bureau of Labor Statistics.

DESCRIPTIONS OF CRITERIA OF WHOLESALE PRICE FLEXIBILITY

Criterion J.—Peak month of index, 1929-31:

Group—	Month
I.....	December 1931
II.....	December 1930–November 1931
III.....	June 1930–November 1930
IV.....	January 1930–May 1930
V.....	November 1929–December 1929
VI.....	September 1929–October 1929
VII.....	June 1929–August 1929
VIII.....	April 1929–May 1929
IX.....	March 1929
X.....	January 1929–February 1929

Criterion K.—Low month of depression, 1932-34:

Group—	Month
I.....	December 1934
II.....	December 1933–November 1934
III.....	August 1933–November 1933
IV.....	June 1933–July 1933
V.....	May 1933
VI.....	April 1933
VII.....	March 1933
VIII.....	December 1932–February 1933
IX.....	July 1932–November 1932
X.....	January 1932–June 1932

TABLE 29.—*Correlation table of commodities distributed according to their ranks by two criteria of wholesale price flexibility*

[Timing of pre-depression peak (1929-31) compared with post-depression peak (1936-38). Commodities classified in 10 groups—group I least flexible, group X most flexible]

CRITERION L

CRITERION J	Group	I and II combined	III	IV	V	VI	VII	VIII	IX	X	Total
	X.....	6	4	5	10	4	9	17	21	8	84
	XI.....	6	1	1	2	3	2	7	23	5	50
	VIII.....	14	6	3	8	5	7	10	6	6	65
	VII.....	7	1	5	7	18	16	9	2	7	72
	VI.....	7	9	9	5	8	8	4	9	13	72
	V.....	15	3	3	5	7	8	3	3	9	56
	IV.....	12	3	11	2	12	8	6	3	1	58
	III.....	21		11	8	7	5	1	1	4	58
	II.....	28	3	3	9	1	8	1	1	5	59
	I.....	41	9	6	4	2		3	1	4	70
Total.....		157	39	57	60	67	71	61	70	62	644

Source: Criterion J—Bureau of Labor Statistics. Criterion L—Bureau of Labor Statistics.

DESCRIPTIONS OF CRITERIA OF WHOLESALE PRICE FLEXIBILITY

Criterion J.—Peak month, 1929-31:

Group—	Month
I.....	December 1931
II.....	December 1930–November 1931
III.....	June 1930–November 1930
IV.....	January 1930–May 1930
V.....	November 1929–December 1929
VI.....	September 1929–October 1929
VII.....	June 1929–August 1929
VIII.....	April 1929–May 1929
IX.....	March 1929
X.....	January 1929–February 1929

Criterion L.—Peak month of index 1936-38:

Group—	Month
I and II.....	December 1938
III.....	July 1938–November 1938
IV.....	April 1938–June 1938
V.....	December 1937–March 1938
VI.....	September 1937–November 1937
VII.....	June 1937–August 1937
VIII.....	April 1937–May 1937
IX.....	January 1937–March 1937
X.....	January 1936–December 1936

TABLE 30.—*Correlation table of commodities distributed according to their ranks by two criteria of wholesale price flexibility*

[Timing of depression low (1932-34) compared with post-depression peak (1936-38). Commodities classified in 10 groups—group I least flexible, group X most flexible]

CRITERION L

Group		I and II combined	III	IV	V	VI	VII	VIII	IX	X	Total
CRITERION K	X.....	7	2	9	5	1	7	7	13	7	58
	IX.....	9	2	3	3	9	11	16	16	9	78
	VIII.....	2	1	1	11	3	16	18	19	10	81
	VII.....	3	1	1	1	6	9	5	10	3	39
	VI.....	8	3	5	10	15	16	5	3	3	68
	V.....	13	3	6	6	9	6	6		3	52
	IV.....	33	4	16	12	12	1		2	7	87
	III.....	26	5	3	5	4	2		1	4	50
	II.....	16	11	7	3	3	1	2	5	6	54
	I.....	42	6	5	4	4	2	3	2	9	77
Total.....		159	38	56	60	66	71	62	71	61	644

Source: Criterion K—Bureau of Labor Statistics. Criterion L—Bureau of Labor Statistics.

DESCRIPTIONS OF CRITERIA OF WHOLESALE PRICE FLEXIBILITY

Criterion K.—Low month of depression, 1932-34:	
Group—	Month
I.....	December 1934
II.....	December 1933–November 1934
III.....	August 1933–November 1933
IV.....	June 1933–July 1933
V.....	May 1933
VI.....	April 1933
VII.....	March 1933
VIII.....	December 1932–February 1933
IX.....	July 1932–November 1932
X.....	January 1932–June 1932

Criterion L.—Peak month, 1936-38:	
Group—	Month
I and II.....	December 1938
III.....	July 1938–November 1938
IV.....	April 1938–June 1938
V.....	December 1937–March 1938
VI.....	September 1937–November 1937
VII.....	June 1937–August 1937
VIII.....	April 1937–May 1937
IX.....	January 1937–March 1937
X.....	January 1936–December 1936

TABLE 31.—*Correlation table of commodities distributed according to their ranks by two criteria of wholesale price flexibility*

[Frequency of change compared with amplitude of cyclical movement. Commodities classified in 10 groups—group I least flexible, group X most flexible]

CRITERION F												
Group		I	II	III	IV	V	VI	VII	VIII	IX	X	Total
CRITERION A	X.....						2	1	6	20	31	60
	IX.....					1	2	3	13	21	23	63
	VIII.....				1	3	4	13	17	18	6	62
	VII.....	1	3	4	7	10	10	11	12	1	2	61
	VI.....	1	1	4	9	9	9	14	4			51
	V.....	2	2	9	9	8	9	8	9	2		58
	IV.....	1	7	11	7	7	14	9		1		57
	III.....	10	8	8	13	10	9	1				59
	II.....	11	17	14	6	5	3	1	1			59
	I.....	33	23	8	3	3						70
Total.....		59	61	58	55	56	62	61	62	64	62	600

Source: Criterion A—National Resources Committee. Criterion F—Bureau of Labor Statistics.

DESCRIPTIONS OF CRITERIA OF WHOLESALE PRICE FLEXIBILITY

Criterion A.—Number of monthly changes, in 95 chances, January 1926–December 1933:

Group—	Number of changes
I.....	0-4
II.....	5-7
III.....	8-11
IV.....	12-16
V.....	17-22
VI.....	23-34
VII.....	35-49
VIII.....	50-77
IX.....	78-92
X.....	93-95

Criterion F.—Percent of decrease from average of 1929 and 1937 peaks to depression low index:

Group—	Percent decrease
I.....	Increase to 8.5 decrease
II.....	8.6-16.7
III.....	16.8-23.1
IV.....	23.2-28.0
V.....	28.1-33.6
VI.....	33.7-39.7
VII.....	39.8-46.3
VIII.....	46.4-57.3
IX.....	57.4-65.9
X.....	66.0-90.0

TABLE 32.—*Correlation table of commodities distributed according to their ranks by two criteria of wholesale price flexibility*

[Frequency of change compared with amplitude of cyclical movement. Commodities classified in 10 groups—group I least flexible, group X most flexible]

CRITERION H

Group		I	II	III	IV	V	VI	VII	VIII	IX	X	Total
CRITERION A	X.....		1	1		3		8	6	13	28	60
	IX.....	1				1	1	6	8	21	27	65
	VIII.....			3		4	8	9	14	17	7	62
	VII.....	4	1	6	8	6	8	6	16	6	1	62
	VI.....	2		4	7	11	9	8	12	4		57
	V.....	6	2	5	8	9	6	10	4	6	1	57
	IV.....	4	7	6	11	9	13	9	2			61
	III.....	8	15	5	9	9	8	5				59
	II.....	15	6	11	15	10	2	1			1	61
	I.....	22	25	20	6	1						74
Total.....		62	57	61	64	63	55	62	62	67	65	618

Source: Criterion A—National Resources Committee. Criterion H—Bureau of Labor Statistics.

DESCRIPTIONS OF CRITERIA OF WHOLESALE PRICE FLEXIBILITY

Criterion A.—Number of monthly changes in 95 chances, January 1926–December 1933:

Group—	Number of changes
I.....	0-4
II.....	5-7
III.....	8-11
IV.....	12-16
V.....	17-22
VI.....	23-34
VII.....	35-49
VIII.....	50-77
IX.....	78-92
X.....	93-95

Criterion H.—Percent decrease from average of 1929 and 1937 to 1932:

Group—	Percent decrease
I.....	28.5 increase to 0.4 decrease
II.....	0.5-7.4
III.....	7.5-12.7
IV.....	12.8-18.2
V.....	18.3-23.4
VI.....	23.5-28.5
VII.....	28.6-34.8
VIII.....	34.9-41.4
IX.....	41.5-51.6
X.....	51.7-81.1

TABLE 33.—*Correlation table of commodities distributed according to their ranks by two criteria of wholesale price flexibility*

[Frequency of change compared with amplitude of cyclical movement. Commodities classified in 10 groups—group I least flexible, group X most flexible]

CRITERION I

CRITERION A	Group	I	II	III	IV	V	VI	VII	VIII	IX	X	Total
	X.....			1	1	1	1	3	10	14	27	58
	IX.....					3	2	5	10	20	25	65
	VIII.....		1		1	2	9	9	14	17	8	61
	VII.....	3	4	2	6	10	7	9	10	5	3	59
	VI.....	1	1	4	5	11	10	11	9	1		53
	V.....	5	2	6	11	7	9	10	6	4	1	61
	IV.....	3	7	13	4	8	10	15	1			61
	III.....	11	8	8	12	8	7	5				59
	II.....	12	12	12	11	5	3	1	1	1		58
	I.....	24	26	12	8	2	1					73
	Total.....	59	61	58	59	57	59	68	61	62	64	608

Source: Criterion A—National Resources Committee. Criterion I—Bureau of Labor Statistics.

DESCRIPTIONS OF CRITERIA OF WHOLESALE PRICE FLEXIBILITY

Criterion A.—Number of monthly changes in 95 chances, January 1926–December 1933:

Group—	Number of changes
I.....	0-4
II.....	5-7
III.....	8-11
IV.....	12-16
V.....	17-22
VI.....	23-34
VII.....	35-49
VIII.....	50-77
IX.....	78-92
X.....	93-95

Criterion I.—Percent decrease, average, February 1929 and February 1937 to February 1933:

Group—	Percent decrease
I.....	Increase to 1.6 decrease
II.....	1.7-10.0
III.....	10.1-16.3
IV.....	16.4-21.0
V.....	21.1-26.2
VI.....	26.3-33.3
VII.....	33.4-40.1
VIII.....	40.2-48.5
IX.....	48.6-57.5
X.....	57.6-86.8

TABLE 34.—*Correlation table of commodities distributed according to their ranks by two criteria of wholesale price flexibility*

[Frequency of change compared with amplitude of cyclical movement. Commodities classified in 10 groups—group I least flexible, group X most flexible]

CRITERION I

CRITERION B	Group	I	II	III	IV	V	VI	VII	VIII	IX	X	Total
	X.....			1	2	2	2	5	11	19	32	74
	IX.....	2		4	1	1	3	2	11	16	19	59
	VIII.....	1	4	4	3	5	7	8	11	15	6	64
	VII.....	2	2	1	3	14	11	10	9	6	4	62
	VI.....	7	2	6	9	8	7	10	7	2	1	59
	V.....	6	4	9	7	8	9	6	8	1		58
	IV.....	8	9	5	6	9	10	10	2	2		61
	III.....	19	15	14	15	8	7	5	5	1	1	93
	II.....	4	9	7	9	2	5	4				40
	I.....	13	18	14	11	9	3	4		1		73
Total.....		62	63	65	66	66	64	67	64	63	63	643

Source: Criterion I—Bureau of Labor Statistics. Criterion B—Bureau of Labor Statistics.

DESCRIPTIONS OF CRITERIA OF WHOLESALE PRICE FLEXIBILITY

Criterion B.—Number of monthly changes in 39 chances, January 1926–April 1929:

Group—	Number of changes
I.....	0
II.....	1
III.....	2-3
IV.....	4-5
V.....	6-8
VI.....	9-13
VII.....	14-20
VIII.....	21-30
IX.....	31-37
X.....	38-39

Criterion I.—Percent decrease, average of February 1929 and February 1937 to February 1933:

Group—	Percent decrease
I.....	Increase to 1.6 decrease
II.....	1.7-10.0
III.....	10.1-16.3
IV.....	16.4-21.0
V.....	21.1-26.2
VI.....	26.3-33.3
VII.....	33.4-40.1
VIII.....	40.2-48.5
IX.....	48.6-57.5
X.....	57.6-86.8

TABLE 35.—*Correlation table of commodities distributed according to their ranks by two criteria of wholesale price flexibility*

[Frequency of change compared with timing of pre-depression peak (1929-31). Commodities classified in 10 groups—group I least flexible, group X most flexible]

CRITERION J

CRITERION A	Group	I	II	III	IV	V	VI	VII	VIII	IX	X	Total
	X.....					2	11	11	6	6	25	61
	IX.....				1	2	15	7	12	10	16	63
	VIII.....			1	3	6	6	5	9	16	14	60
	VII.....		2	2	8	7	9	12	10	5	8	63
	VI.....		2	7	10	5	6	8	7	2	7	54
	V.....		3	11	11	10	5	9	3	2	5	59
	IV.....	4	9	12	12	7	3	1	5	4	3	60
	III.....	14	11	11	6	5	1	7	2	1	2	60
	II.....	13	15	9	4	5	3	4	5	2	1	61
	I.....	39	16	2	1	3	10		3	1		75
	Total.....	70	58	55	56	52	69	64	62	49	81	616

Source: Criterion A—National Resources Committee. Criterion J—Bureau of Labor Statistics.

DESCRIPTIONS OF CRITERIA OF WHOLESALE PRICE FLEXIBILITY

Criterion A.—Number of monthly changes in 95 changes, January 1926–December 1933:

Group—	Number of changes
I.....	0-4
II.....	5-7
III.....	8-11
IV.....	12-16
V.....	17-22
VI.....	23-34
VII.....	35-49
VIII.....	50-77
IX.....	78-92
X.....	93-95

Criterion J.—Peak month of index, 1929-31:

Group—	Peak month
I.....	December 1931
II.....	December 1930–November 1931
III.....	June 1930–November 1930
IV.....	January 1930–May 1930
V.....	November 1929–December 1929
VI.....	September 1929–October 1929
VII.....	June 1929–August 1929
VIII.....	April 1929–May 1929
IX.....	March 1929
X.....	January 1929–February 1929

TABLE 36.—*Correlation table of commodities distributed according to their ranks by two criteria of wholesale price flexibility*

[Frequency of change compared with timing of depression low (1932-34). Commodities classified in 10 groups—group I least flexible, group X most flexible]

CRITERION K												
CRITERION A	Group	I	II	III	IV	V	VI	VII	VIII	IX	X	Total
	X.....	1		2	2	1	2	2	21	15	15	61
	IX.....		2	2	1	2	3	5	23	14	11	63
	VIII.....		4	1	1	5	5	10	16	14	7	63
	VII.....	2	4	4	7	7	12	9	4	9	3	61
	VI.....	3	4	1	6	7	13	5	7	4	4	54
	V.....	7	3	2	12	4	13	4	1	5	8	59
	IV.....	3	3	6	10	7	13	1	4	6	7	60
	III.....	10	9	9	15	8	2	1	1	1	3	59
	II.....	13	8	7	18	6	3		1	2	4	62
	I.....	37	18	13	3			1		2		74
	Total.....	76	55	47	75	47	66	38	78	72	62	616

Source: Criterion A—National Resources Committee. Criterion K—Bureau of Labor Statistics.

DESCRIPTIONS OF CRITERIA OF WHOLESALE PRICE FLEXIBILITY

Criterion A.—Number of monthly changes in 95 chances, January 1926–December 1933:

Group—	Number of changes
I.....	0-4
II.....	5-7
III.....	8-11
IV.....	12-16
V.....	17-22
VI.....	23-34
VII.....	35-49
VIII.....	50-77
IX.....	78-92
X.....	93-95

Criterion K.—Low month of depression, 1932-34:

Group	Month
I.....	December 1934
II.....	December 1933–November 1934
III.....	August 1933–November 1933
IV.....	June 1933–July 1933
V.....	May 1933
VI.....	April 1933
VII.....	March 1933
VIII.....	December 1932–February 1933
IX.....	July 1932–November 1932
X.....	January 1932–June 1932

TABLE 37.—*Correlation table of commodities distributed according to their ranks by two criteria of wholesale price flexibility*

[Frequency of change compared with timing of post-depression peak (1936-38). Commodities classified in 10 groups—group I least flexible, group X most flexible]

CRITERION L

CRITERION A	Group	I and II combined	III	IV	V	VI	VII	VIII	IX	X	Total
	X.....		1	1	1	5	5	14	22	11	60
	IX.....	3	2	1	5	3	10	15	13	11	63
	VIII.....	1		5	3	3	9	10	24	7	62
	VII.....	4	3	7	5	8	18	7	3	7	62
	VI.....	5		10	7	10	10	5	2	5	54
	V.....	9	6	9	6	11	6	3	3	5	58
	IV.....	15	3	4	9	12	9	2	1	4	59
	III.....	25		8	8	7	5	1		4	58
	II.....	38	5	4	4	3	1			5	60
	I.....	41	17	5	2	2		1		3	71
Total.....		141	37	54	50	64	73	58	68	62	607

Source: Criterion A—National Resources Committee. Criterion L—Bureau of Labor Statistics.

DESCRIPTIONS OF CRITERIA OF WHOLESALE PRICE FLEXIBILITY

Criterion A.—Number of monthly changes in 95 chances, January 1926-December 1933:

Group—	Number of changes
I.....	0-4
II.....	5-7
III.....	8-11
IV.....	12-16
V.....	17-22
VI.....	23-34
VII.....	35-49
VIII.....	50-77
IX.....	78-92
X.....	93-95

Criterion L.—Peak month of index, 1936-38:

Group—	Peak month
I and II.....	December 1938
III.....	July 1938-November 1938
IV.....	April 1938-June 1938
V.....	December 1937-March 1938
VI.....	September 1937-November 1937
VII.....	June 1937-August 1937
VIII.....	April 1937-May 1937
IX.....	January 1937-March 1937
X.....	January 1936-December 1936

TABLE 38.—*Correlation table of commodities distributed according to their ranks by two criteria of wholesale price flexibility*

[Amplitude of cyclical movement compared with timing of pre-depression peak. Commodities classified in 10 groups—group I least flexible, group X most flexible]

CRITERION J

CRITERION I	Group	I	II	III	IV	V	VI	VII	VIII	IX	X	Total
	X.....				1	2	9	9	7	10	24	62
	IX.....				3	6	12	11	8	12	13	65
	VIII.....			5	6	4	6	11	11	12	9	64
	VII.....	1	3	5	7	11	9	4	5	8	14	67
	VI.....	2	2	8	13	7	4	12	11	1	5	65
	V.....	1	10	9	9	11	6	8	7	2	3	66
	IV.....	5	11	11	5	7	8	5	7	2	4	65
	III.....	7	14	5	6	4	8	6	2	4	9	65
	II.....	17	14	7	4	7	8	3	2	-----	1	63
	I.....	37	4	8	2	1	2	1	4	1	2	62
Total.....		70	58	58	56	60	72	70	64	52	84	644

Source: Criterion J—Bureau of Labor Statistics. Criterion I—Bureau of Labor Statistics.

DESCRIPTIONS OF CRITERIA OF WHOLESALE PRICE FLEXIBILITY

Criterion I.—Percent decrease, average, February 1929 and February 1937 to February 1933:

Group—	Percent decrease
I.....	Increase to 1.6 decrease
II.....	1.7-10.0
III.....	10.1-16.3
IV.....	16.4-21.0
V.....	21-1-26.2
VI.....	26.3-33.3
VII.....	33.4-40.1
VIII.....	40.2-48.5
IX.....	48.6-57.5
X.....	57.6-86.8

Criterion J.—Peak month of index, 1929-31:

Group—	Month
I.....	December 1931
II.....	December 1930-November 1931
III.....	June 1930-November 1930
IV.....	January 1930-May 1930
V.....	November 1929-December 1929
VI.....	September 1929-October 1929
VII.....	June 1929-August 1929
VIII.....	April 1929-May 1929
IX.....	March 1929
X.....	January 1929-February 1929

TABLE 39.—*Correlation table of commodities distributed according to their ranks by two criteria of wholesale price flexibility*

[Amplitude of cyclical movement compared with timing of depression low (1932-34). Commodities classified in 10 groups—group I least flexible, group X most flexible]

		CRITERION K										
Group		I	II	III	IV	V	VI	VII	VIII	IX	X	Total
CRITERION I	X.....		4		2	2	3	3	29	10	12	65
	IX.....		2	2		1	6	6	19	18	8	62
	VIII.....		1	2	1	6	8	15	11	16	4	64
	VII.....	1	2	4	8	4	17	6	9	10	6	67
	VI.....		4	3	13	16	11	2	5	8	1	63
	V.....	5	5	5	16	6	11	3	4	2	9	66
	IV.....	6	7	9	14	9	5	2	3	4	8	67
	III.....	6	8	10	20	7	6			4	4	65
	II.....	22	14	8	8	1	1	1	1	5	2	63
	I.....	39	8	6	4						5	62
Total.....		79	55	49	86	52	68	38	81	77	59	644

Source: Criterion I—Bureau of Labor Statistics. Criterion K—Bureau of Labor Statistics.

DESCRIPTIONS OF CRITERIA OF WHOLESALE PRICE FLEXIBILITY

Criterion I.—Percent decrease, average of February 1929 and February 1937 to February 1933:

Group—	Percent decrease
I.....	Increase to 1.6 decrease
II.....	1.7-10.0
III.....	10.1-16.3
IV.....	16.4-21.0
V.....	21.1-26.2
VI.....	26.3-33.3
VII.....	33.4-40.1
VIII.....	40.2-48.5
IX.....	48.6-57.5
X.....	57.6-86.8

Criterion K.—Low month of depression, 1932-34:

Group—	Month
I.....	December 1934
II.....	December 1933-November 1934
III.....	August 1933-November 1933
IV.....	June 1933-July 1933
V.....	May 1933
VI.....	April 1933
VII.....	March 1933
VIII.....	December 1932-February 1933
IX.....	July 1932-November 1932
X.....	January 1932-June 1932

TABLE 40.—*Correlation table of commodities distributed according to their ranks by two criteria of wholesale price flexibility*

[Frequency of change compared with change per change. Commodities classified in 10 groups—group I least flexible, group X most flexible]

CRITERION M

CRITERION A	Group	I	II	III	IV	V	VI	VII	VIII	IX	X	Total
	X.....		2	4	7	6	5	6	15	8	7	60
	IX.....	1	4	9	10	10	7	8	3	5	6	63
	VIII.....	7	17	6	8	6	3	6	4	2	3	62
	VII.....	9	4	11	8	8	8	6	4	1	3	62
	VI.....	3	7	7	7	4	9	5	7	3	2	54
	V.....	2	6	3	6	4	5	7	5	13	6	57
	IV.....	7	5	5	8	6	3	3	7	6	7	57
	III.....	3	4	2	2	4	4	5	6	12	10	52
	II.....	7	1	5	2	3	6	3	3	7	7	44
	I.....	4	4	3	2	2		9	5		5	34
	Total.....	43	54	55	60	53	50	58	59	57	56	545

Source: Criterion A—National Resources Committee. Criterion M—Bureau of Labor Statistics.

DESCRIPTIONS OF CRITERIA OF WHOLESALE PRICE FLEXIBILITY

Criterion A.—Number of monthly changes in 95 chances, January 1926–December 1933:

Group—	Number of changes
I.....	0–4
II.....	5–7
III.....	8–11
IV.....	12–16
V.....	17–22
VI.....	23–34
VII.....	35–49
VIII.....	50–77
IX.....	78–92
X.....	93–95

Criterion M.—Average change (index points) per change January 1926–April 1929:

Group—	Average change
I.....	0.0–1.6
II.....	1.7–2.2
III.....	2.3–2.6
IV.....	2.7–3.2
V.....	3.3–3.8
VI.....	3.9–4.5
VII.....	4.6–5.6
VIII.....	5.7–6.7
IX.....	6.8–8.9
X.....	9.0–34.7

TABLE 41.—*Correlation table of commodities distributed according to their ranks by two criteria of wholesale price flexibility*

Amplitude of cyclical movement compared with change per change. Commodities classified in 10 groups—group I least flexible, group X most flexible]

CRITERION M

CRITERION I	Group	I	II	III	IV	V	VI	VII	VIII	IX	X	Total
	X.....	2	3	2	4	7	6	7	16	10	6	63
	IX.....		5	10	15	9	5	7	3	3	5	62
	VIII.....	1	10	8	7	8	6	9	3	5	7	64
	VII.....	2	5	6	12	4	8	5	5	10	5	62
	VI.....	8	6	8	5	4	6	5	8	7	4	61
	V.....	5	7	7	2	5	7	5	10	6	4	58
	IV.....	8	8	5	5	3	4	2	4	8	8	55
	III.....	13	8	4	4	5	3	2	1	3	7	50
	II.....	5	2	6	2	8	5	5	6	1	5	45
	I.....	12	2	2	3	4	4	11	3	4	4	49
	Total.....	56	56	58	59	57	54	58	59	57	55	569

Source: Criterion M—Bureau of Labor Statistics. Criterion I—Bureau of Labor Statistics.

DESCRIPTIONS OF CRITERIA OF WHOLESALE PRICE FLEXIBILITY

Criterion I.—Percent decrease, average of February 1929 and February 1937 to February 1933:

Group—	Percent decrease
I.....	Increase to 1.6 decrease
II.....	1.7-10.0
III.....	10.1-16.3
IV.....	16.4-21.0
V.....	21.1-26.2
VI.....	26.3-33.3
VII.....	33.4-40.1
VIII.....	40.2-48.5
IX.....	48.6-57.5
X.....	57.6-83.8

Criterion M.—Average change (index points) per change, January 1926-April 1929:

Group—	Average change
I.....	0.0-1.6
II.....	1.7-2.2
III.....	2.3-2.6
IV.....	2.7-3.2
V.....	3.3-3.8
VI.....	3.9-4.5
VII.....	4.6-5.6
VIII.....	5.7-6.7
IX.....	6.8-8.9
X.....	9.0-34.7

TABLE 42.—*Correlation table of commodities distributed according to their ranks by two criteria of wholesale price flexibility*

[Peak month, 1929-31, compared with average change (index points) per change, January 1926 to April 1929. Commodities classified in 10 groups—group I least flexible, group X most flexible]

CRITERION M

CRITERION J	Group	I	II	III	IV	V	VI	VII	VIII	IX	X	Total
	X.....	8	14	6	5	6	11	12	8	7	7	84
	IX.....	2	7	5	11	6	3	4	5	4	3	50
	VIII.....	4	6	8	9	8	6	7	6	6	4	64
	VII.....	12	5	7	7	6	7	5	10	5	6	70
	VI.....	8	7	11	5	8	6	5	4	4	10	68
	V.....	6	6	3	4	7	3	6	5	9	7	56
	IV.....	1	6	7	7	5	5	5	5	6	3	50
	III.....	7	2	3	6	5	3	2	6	8	9	51
	II.....	5	2	4	2	1	6	3	6	4	3	36
	I.....	3	4	4	3	5	3	10	5	4	6	47
Total.....		56	59	58	59	57	53	59	60	57	58	576

Source: Criterion J—Bureau of Labor Statistics. Criterion M—Bureau of Labor Statistics.

DESCRIPTIONS OF CRITERIA OF WHOLESALE PRICE FLEXIBILITY

Criterion J.—Peak month, 1929-31:

Group—	Month
I.....	December 1931
II.....	December 1930–November 1931
III.....	June 1930–November 1930
IV.....	January 1930–May 1930
V.....	November 1929–December 1929
VI.....	September 1929–October 1929
VII.....	June 1929–August 1929
VIII.....	April 1929–May 1929
IX.....	March 1929
X.....	January 1929–February 1929

Criterion M.—Average change (index points) per change, January 1926–April 1929:

Group—	Average change
I.....	0.0–1.6
II.....	1.7–2.2
III.....	2.3–2.6
IV.....	2.7–3.2
V.....	3.3–3.8
VI.....	3.9–4.5
VII.....	4.6–5.6
VIII.....	5.7–6.7
IX.....	6.8–8.9
X.....	9.0–34.7

TABLE 43.—*Correlation table of commodities distributed according to their ranks by two criteria of wholesale price flexibility*

[Frequency of change compared with aggregate change less net change. Commodities classified in 10 groups—group I least flexible, group X most flexible]

CRITERION N

CRITERION A	Group	I, II, and III combined	IV	V	VI	VII	VIII	IX	X	Total
	X.....					1	5	19	35	60
	IX.....				1	4	12	27	19	63
	VIII.....			5	8	15	15	10	9	62
	VII.....	2	1	7	16	14	14	7	1	62
	VI.....	3	6	11	8	12	12	2		54
	V.....	11	10	15	9	8	4	2		59
	IV.....	20	12	10	9	6	3			60
	III.....	34	7	11	6	2				60
	II.....	44	10	4	2	1				61
	I.....	70	2	1		2				75
	Total.....	184	48	64	59	65	65	67	64	616

Source: Criterion A—National Resources Committee. Criterion N—Bureau of Labor Statistics.

DESCRIPTIONS OF CRITERIA OF WHOLESALE PRICE FLEXIBILITY

Criterion A.—Number of monthly changes in 95 chances, January 1926–December 1933:

Group—	Number of changes
I.....	0–4
II.....	5–7
III.....	8–11
IV.....	12–16
V.....	17–22
VI.....	23–34
VII.....	35–49
VIII.....	50–77
IX.....	78–92
X.....	93–95

Criterion N.—Aggregate change (index points) less net change, January 1926–April 1929:

Group—	Difference
I, II, and III.....	0.0
IV.....	0.1–8
V.....	9–17
VI.....	18–28
VII.....	29–45
VIII.....	46–79
IX.....	80–151
X.....	152 and up

TABLE 44.—*Correlation table of commodities distributed according to their ranks by two criteria of wholesale price flexibility*

[Amplitude of cyclical movement compared with aggregate change less net change. Commodities classified in 10 groups—group I least flexible, group X most flexible]

CRITERION N

Group		I, II, and III combined	IV	V	VI	VII	VIII	IX	X	Total
CRITERION I	X.....	1	-----	2	1	2	6	15	35	62
	IX.....	2	-----	1	1	14	14	20	12	64
	VIII.....	5	3	7	6	11	8	13	10	63
	VII.....	15	7	9	8	10	10	4	4	67
	VI.....	11	12	10	15	5	7	3	1	64
	V.....	22	6	7	9	7	7	7	1	66
	IV.....	29	10	11	6	4	3	2	1	66
	III.....	34	11	8	4	2	6	-----	-----	65
	II.....	39	7	6	1	5	3	2	-----	63
	I.....	37	8	5	9	3	1	-----	-----	63
Total.....		195	64	66	60	63	65	66	64	643

Source: Criterion I—Bureau of Labor Statistics. Criterion N—Bureau of Labor Statistics.

DESCRIPTIONS OF CRITERIA OF WHOLESALE PRICE FLEXIBILITY

Criterion I.—Percent decrease, average of February 1929 and February 1937 to February 1933:

Group—	Percent decrease
I.....	Increase to 1.6 decrease
II.....	1.7-10.0
III.....	10.1-16.3
IV.....	16.4-21.0
V.....	21.1-26.2
VI.....	26.3-33.3
VII.....	33.4-40.1
VIII.....	40.2-48.5
IX.....	48.6-57.5
X.....	57.6-86.8

Criterion N.—Aggregate change (index points) less net change, January 1926-April 1929:

Group—	Difference
I, II, and III.....	0.0
IV.....	0.1- 8
V.....	9- 17
VI.....	18- 28
VII.....	29- 45
VIII.....	46- 79
IX.....	80-151
X.....	152 and up

TABLE 45.—*Distribution of commodities according to differences in rank under various criteria of wholesale price flexibility*

[Commodities classified in 10 groups—maximum difference=9]

Correlation between criteria	Difference in rank									
	Same rank	1 and less	2 and less	3 and less	4 and less	5 and less	6 and less	7 and less	8 and less	9 and less
C-D.....	29.0	63.0	80.7	89.4	95.2	97.7	99.1	99.6	99.7	100.0
J-K.....	15.9	42.7	62.5	73.6	85.2	90.8	94.8	96.9	99.2	100.0
A-F.....	27.0	66.5	85.7	95.2	98.5	99.5	99.8	100.0	-----	-----
A-H.....	21.2	57.0	80.5	92.3	97.0	98.8	99.4	99.6	100.0	-----
A-I.....	22.2	59.2	81.6	92.6	97.2	98.7	99.7	100.0	-----	-----
B-I.....	19.6	50.5	73.2	85.3	91.7	96.4	99.0	99.5	100.0	-----
A-J.....	24.2	52.9	72.2	84.4	92.0	97.0	98.5	99.7	100.0	-----
A-K.....	21.9	54.5	77.1	84.2	90.0	94.1	97.3	98.8	99.8	100.0
I-J.....	19.7	45.8	66.8	82.2	91.2	95.4	97.4	99.4	99.7	100.0
I-K.....	21.9	56.8	76.1	86.6	90.5	93.6	96.6	98.3	99.2	100.0
A-M.....	9.2	25.7	40.8	53.6	67.9	77.1	90.5	97.3	99.1	100.0
I-M.....	9.0	25.9	45.1	61.4	72.6	84.0	93.5	96.8	98.9	100.0
J-M.....	11.1	27.8	45.4	60.8	72.8	84.5	92.2	95.7	98.8	100.0
Relation to be anticipated if purely chance distribution.....	10.0	28.0	44.0	58.0	70.0	80.0	88.0	94.0	98.0	100.0

Source: Bureau of Labor Statistics.

TABLE 46.—*Correlation table of commodities distributed according to their ranks by two criteria of wholesale price flexibility*

[Frequency of change 1926-29 compared with frequency of change 1926-33. Commodities classified in 10 groups—group I, least flexible; group X, most flexible]

CRITERION B

CRITERION A	Group	I	II	III	IV	V	VI	VII	VIII	IX	X	Total
	X.....								1	3	56	60
	IX.....						1	2	2	41	17	63
	VIII.....				1			8	46	6	1	62
	VII.....			1		4	10	30	13	3	1	62
	VI.....			3	4	13	19	10	3	2		54
	V.....	2	1	10	8	20	16	2				59
	IV.....	3	5	10	21	10	7	1	1	2		60
	III.....	8	8	24	11	7	2					60
	II.....	17	9	26	6	3						61
	I.....	41	16	14	4							75
	Total.....	71	39	88	55	57	55	53	66	57	75	616

Source: Criterion A—National Resources Committee. Criterion B—Bureau of Labor Statistics.

DESCRIPTIONS OF CRITERIA OF WHOLESALE PRICE FLEXIBILITY

Criterion A.—Number of monthly changes in 95 chances, January 1926-December 1933:

Group—	Number of changes
I.....	0-4
II.....	5-7
III.....	8-11
IV.....	12-16
V.....	17-22
VI.....	23-34
VII.....	35-49
VIII.....	50-77
IX.....	78-92
X.....	93-95

Criterion B.—Number of monthly changes in 39 chances, January 1926-April 1929:

Group—	Number of changes
I.....	0
II.....	1
III.....	2-3
IV.....	4-5
V.....	6-8
VI.....	9-13
VII.....	14-20
VIII.....	21-30
IX.....	31-37
X.....	38-39

TABLE 47.—*Correlation table of commodities distributed according to their ranks by two criteria of wholesale price flexibility*

[Two measures of amplitude of cyclical movement compared. Commodities classified in 10 groups—group I least flexible, group X most flexible]

CRITERION F

CRITERION E	Group	I	II	III	IV	V	VI	VII	VIII	IX	X	Total
	X.....							1	4	15	42	62
	IX.....					1	2	8	17	23	11	62
	VIII.....					2	5	16	24	11	2	60
	VII.....			I		5	16	16	9	4	5	56
	VI.....			1	11	15	12	9	4	8		60
	V.....		1	6	15	15	13	6	2	2		60
	IV.....		5	21	15	10	5	3	1	1		61
	III.....	1	26	19	5	3	4	1	1	1		61
	II.....	24	16	5	6	4	3				1	59
	I.....	34	13	5	3	1	2	1				59
Total.....		59	61	58	55	56	62	61	62	65	61	600

Source: Criterion E—National Resources Committee. Criterion F—Bureau of Labor Statistics.

DESCRIPTIONS OF CRITERIA OF WHOLESALE PRICE FLEXIBILITY

Criterion E.—Average of 1929 and 1937 indexes, less 1932 index, on basis of 1929 equals 100 percent:

Group—	Percent
I.....	-20.6-0.4
II.....	.5-7.5
III.....	7.8-12.8
IV.....	13.0-17.5
V.....	17.6-23.2
VI.....	23.3-27.4
VII.....	27.5-32.9
VIII.....	33.2-39.4
IX.....	39.5-47.5
X.....	47.9-81.8

Criterion F.—Percent decrease, average of 1929 and 1937 peaks to depression low index:

Group—	Percent decrease
I.....	Increase to 8.5 decrease
II.....	8.6-16.7
III.....	16.8-23.1
IV.....	23.2-28.0
V.....	28.1-33.6
VI.....	33.7-39.7
VII.....	39.8-46.3
VIII.....	46.4-57.3
IX.....	57.4-65.9
X.....	66.0-90.0

TABLE 48.—*Correlation table of commodities distributed according to their ranks by two criteria of wholesale price flexibility*

[Two measures of amplitude of cyclical movement compared. Commodities classified in 10 groups—group I least flexible, group X most flexible]

CRITERION H

CRITERION E	Group	I	II	III	IV	V	VI	VII	VIII	IX	X	Total
	X.....							1	1	11	51	64
	IX.....					1		3	11	36	11	62
	VIII.....							10	33	16	3	62
	VII.....				2		8	36	13	2		61
	VI.....			1		8	35	14	2			60
	V.....				7	39	13	2	1			62
	IV.....			6	43	12	1					62
	III.....		2	47	12	1						62
	II.....	1	52	6			1					60
	I.....	60	1									61
Total.....		61	55	60	64	61	58	66	61	65	65	616

Source: Criterion E—National Resources Committee. Criterion H—Bureau of Labor Statistics.

DESCRIPTIONS OF CRITERIA OF WHOLESALE PRICE FLEXIBILITY

Criterion E.—Average of 1929 and 1937 indexes, less 1932 index, on basis of 1929 equals 100 percent:

Group—	Percent
I.....	-20.6-0.4
II.....	0.5-7.5
III.....	7.8-12.8
IV.....	13.0-17.5
V.....	17.6-23.2
VI.....	23.3-27.4
VII.....	27.5-32.9
VIII.....	33.2-39.4
IX.....	39.5-47.5
X.....	47.9-81.8

Criterion H.—Percent decrease from average of 1929 and 1937 to 1932:

Group—	Percent decrease
I.....	28.5 increase to 0.4 decrease
II.....	0.5-7.4
III.....	7.5-12.7
IV.....	12.8-18.2
V.....	18.3-23.4
VI.....	23.5-28.5
VII.....	28.6-34.8
VIII.....	34.9-41.4
IX.....	41.5-51.6
X.....	51.7-81.1

TABLE 49.—*Correlation table of commodities distributed according to their ranks by two criteria of wholesale price flexibility*

[Amplitude of cyclical movement compared with change per change. Commodities classified in 10 groups—group I least flexible, group X most flexible]

CRITERION M

Group		I	II	III	IV	V	VI	VII	VIII	IX	X	Total
CRITERION H	X.....	2	6	4	4	5	6	7	14	9	7	64
	IX.....		4	8	14	10	7	7	6	5	5	66
	VIII.....	2	9	10	9	8	6	7	6	2	5	64
	VII.....	1	6	3	11	3	9	8	5	10	7	63
	VI.....	9	7	5	4	6	4	4	7	11	2	59
	V.....	3	5	9	4	6	8	5	5	8	8	61
	IV.....	12	5	6	7	2	5	1	5	5	6	54
	III.....	11	9	4	1	6	2	6	5	2	4	50
	II.....	4	6	8	3	5	4	2	3	2	8	45
	I.....	11	1	1	2	6	3	11	4	4	5	48
Total.....		55	58	58	59	57	54	58	60	58	57	574

Source: Criterion H—Bureau of Labor Statistics. Criterion M—Bureau of Labor Statistics.

DESCRIPTIONS OF CRITERIA OF WHOLESALE PRICE FLEXIBILITY

Criterion H.—Percent decrease from average of 1929 and 1937 to 1932:

Group—	Percent decrease
I.....	Increases to 0.4
II.....	0.5-7.4
III.....	7.5-12.7
IV.....	12.8-18.2
V.....	18.3-23.4
VI.....	23.5-28.5
VII.....	28.6-34.8
VIII.....	34.9-41.4
IX.....	41.5-51.6
X.....	51.7-81.1

Criterion M.—Average change (index points) per change, January 1926 to April 1929:

Group—	Average change
I.....	0.0-1.6
II.....	1.7-2.2
III.....	2.3-2.6
IV.....	2.7-3.2
V.....	3.3-3.8
VI.....	3.9-4.5
VII.....	4.6-5.6
VIII.....	5.7-6.7
IX.....	6.8-8.9
X.....	9.0-34.7

TABLE 50.—Correlation table of commodities distributed according to their ranks by two criteria of wholesale price flexibility

[Two measures of amplitude of cyclical movement compared. Commodities classified in 10 groups—group I least flexible, group X most flexible]

CRITERION I											
CRITERION F											
Group	I	II	III	IV	V	VI	VII	VIII	IX	X	Total
X.....				1			3	3	6	51	64
IX.....				1		2	6	9	33	11	62
VIII.....						2	3	34	24		63
VII.....				1	7	10	27	16			61
VI.....		2	4	2	11	21	24	1			65
V.....	2		2	14	19	23	1				61
IV.....	1	4	9	21	25	2					62
III.....	3	10	23	25	3						64
II.....	8	31	25	1							66
I.....	47	16									63
Total.....	61	63	63	66	65	60	64	63	63	62	630

Source: Criterion F—Bureau of Labor Statistics. Criterion I—Bureau of Labor Statistics.

DESCRIPTIONS OF CRITERIA OF WHOLESALE PRICE FLEXIBILITY

Criterion I.—Percent decrease, average of February 1929 and February 1937 to February 1933:

Group—	Percent decrease Increase to 1.6 decrease
I.....	1.7-10.0
II.....	10.1-16.3
III.....	16.4-21.0
IV.....	21.1-26.2
V.....	26.3-33.3
VI.....	33.4-40.1
VII.....	40.2-48.5
VIII.....	48.6-57.5
IX.....	57.6-86.8

Criterion F.—Percent decrease, average of 1929 and 1937 peaks, to depression low index:

Group—	Percent decrease Increase to 8.5 decrease
I.....	8.6-16.7
II.....	16.8-23.1
III.....	23.2-28.0
IV.....	28.1-33.6
V.....	33.7-39.7
VI.....	39.8-46.3
VII.....	46.4-57.3
VIII.....	57.4-65.9
IX.....	66.0-90.0

TABLE 51.—*Correlation table of commodities distributed according to their ranks by two criteria of wholesale price flexibility*

[Two measures of amplitude of cyclical movement compared. Commodities classified in 10 groups—group I least flexible, group X most flexible]

CRITERION I

CRITERION II	Group	I	II	III	IV	V	VI	VII	VIII	IX	X	Total
	X.....							2	2	15	46	65
	IX.....							1	15	36	13	65
	VIII.....						3	18	33	9	1	64
	VII.....				2	5	17	23	12	3	2	64
	VI.....				6	27	20	11	1			65
	V.....		1	2	17	17	15	10	2			64
	IV.....		2	25	26	8	4	1				66
	III.....		19	24	11	5	4					63
	II.....	14	30	11		2	2	1			1	61
	I.....	47	10	3	3	2						65
	Total.....	61	62	65	65	66	65	67	65	63	63	642

Source: Criterion II—Bureau of Labor Statistics. Criterion I—Bureau of Labor Statistics.

DESCRIPTIONS OF CRITERIA OF WHOLESALE PRICE FLEXIBILITY

Criterion II.—Percent decrease from average of 1929 and 1937 to 1932:

Group—	Percent decrease
I.....	28.5 increase to 0.4 decrease
II.....	0.5-7.4
III.....	7.5-12.7
IV.....	12.8-18.2
V.....	18.3-23.4
VI.....	23.5-28.5
VII.....	28.6-34.8
VIII.....	34.9-41.4
IX.....	41.5-51.6
X.....	51.7-81.1

Criterion I.—Percent decrease from average of February 1929 and February 1937 to February 1933:

Group—	Percent decrease
I.....	Increase to 1.6 decrease
II.....	1.7-10.0
III.....	10.1-16.3
IV.....	16.4-21.0
V.....	21.1-26.2
VI.....	26.3-33.3
VII.....	33.4-40.1
VIII.....	40.2-48.5
IX.....	48.6-57.5
X.....	57.6-86.8

TABLE 52.—*Correlation table of commodities distributed according to their ranks by two criteria of wholesale price flexibility*

[Frequency of change compared with amplitude of cyclical movement. Commodities classified in 10 groups—group I least flexible, group X most flexible]

CRITERION G												
CRITERION A	Group	I	II	III	IV	V	VI	VII	VIII	IX	X	Total
	X-----						2	1	5	21	31	60
	IX-----					1	2	3	13	19	25	63
	VIII-----				1	4	5	9	17	19	6	61
	VII-----		3	5	6	11	10	10	12	1	2	60
	VI-----		3	2	10	8	11	16	4			54
	V-----	3		7	12	8	9	10	9	2		60
	IV-----	1	8	9	7	8	13	12	2	1		61
	III-----	8	9	10	13	11	8		1			60
	II-----	12	15	17	6	4	4	1	1	1		61
	I-----	36	24	10	2	2	1					75
	Total-----	60	62	60	57	57	65	62	64	64	64	615

Source: Criterion A—National Resources Committee. Criterion G—Bureau of Labor Statistics.

DESCRIPTIONS OF CRITERIA OF WHOLESALE PRICE FLEXIBILITY

Criterion A.—Number of monthly changes in 95 chances, January 1926–December 1933:

Group—	Number of changes
I.....	0–4
II.....	5–7
III.....	8–11
IV.....	12–16
V.....	17–22
VI.....	23–34
VII.....	35–49
VIII.....	50–77
IX.....	78–92
X.....	93–95

Criterion G.—Percent decrease from average of 1929 peak and 1936–March 1937 peak to depression low index:

Group—	Percent decrease
I.....	Increase to 7.8 decrease
II.....	7.9–15.3
III.....	15.4–20.9
IV.....	21.0–27.0
V.....	27.1–32.7
VI.....	32.8–38.5
VII.....	38.6–45.4
VIII.....	45.5–55.8
IX.....	55.9–65.4
X.....	65.5–89.9

TABLE 53.—Correlation table of commodities distributed according to their ranks by two criteria of wholesale price flexibility

[Frequency of change compared with amplitude of cyclical movement. Commodities classified in 10 groups—group I least flexible, group X most flexible]

CRITERION H

CRITERION B	Group	I	II	III	IV	V	VI	VII	VIII	IX	X	Total
	X.....		1		1	3		10	8	19	33	75
	IX.....	2		4	2		2	5	6	15	22	58
	VIII.....	2	1	6	5	5	6	9	9	17	5	65
	VII.....	1	2	2	3	9	13	8	16	4	4	62
	VI.....	6	4	5	12	5	9	8	10	3		62
	V.....	6	4	7	8	11	10	3	6	3		58
	IV.....	7	9	4	5	11	10	9	4	1	1	61
	III.....	21	17	12	11	9	6	9	5	3		93
	II.....	3	7	9	7	8	4	2				40
	I.....	18	18	14	13	5	3	3			1	75
	Total.....	66	63	63	67	66	63	66	64	65	66	649

Source: Criterion B—Bureau of Labor Statistics. Criterion H—Bureau of Labor Statistics.

DESCRIPTIONS OF CRITERIA OF WHOLESALE PRICE FLEXIBILITY

Criterion B.—Number of monthly changes in 39 chances, January 1926–April 1929:

Group—	Number of changes
I.....	0
II.....	1
III.....	2–3
IV.....	4–5
V.....	6–8
VI.....	9–13
VII.....	14–20
VIII.....	21–30
IX.....	31–37
X.....	38–39

Criterion H.—Percent decrease from average of 1929 and 1937 to 1932:

Group—	Percent decrease
I.....	28.5 increase to 0.4 decrease
II.....	0.5–7.4
III.....	7.5–12.7
IV.....	12.8–18.2
V.....	18.3–23.4
VI.....	23.5–28.5
VII.....	28.6–34.8
VIII.....	34.9–41.4
IX.....	41.5–51.6
X.....	51.7–81.1

TABLE 54.—*Correlation table of commodities distributed according to their ranks by two criteria of wholesale price flexibility*

[Frequency of change compared with timing of pre-depression peak (1929-31). Commodities classified in 10 groups—group I least flexible, group X most flexible]

CRITERION J

CRITERION H	Group	I	II	III	IV	V	VI	VII	VIII	IX	X	Total
	X.....					1	12	13	5	11	22	64
	IX.....			1	5	4	10	8	9	14	15	66
	VIII.....		1	4	4	9	6	10	13	10	7	64
	VII.....		3	9	6	13	6	5	8	5	11	66
	VI.....	1	5	7	12	5	5	9	8	2	10	64
	V.....	3	7	11	11	5	8	8	7	1	5	66
	IV.....	3	14	6	8	8	7	11	5	1	3	66
	III.....	6	11	7	4	9	8	4	4	4	7	64
	II.....	21	15	7	4	3	5	3	2		3	63
	I.....	37	5	7	2	3	4	1	4	1	2	66
Total.....		71	61	59	56	60	71	72	65	49	85	649

Source: Criterion H—Bureau of Labor Statistics. Criterion J—Bureau of Labor Statistics.

DESCRIPTIONS OF CRITERIA OF WHOLESALE PRICE FLEXIBILITY

Criterion H.—Percent decrease from average of 1929 and 1937 to 1932:

Group—	Percent decrease
I.....	28.5 increase to 0.4 decrease
II.....	0.5-7.4
III.....	7.5-12.7
IV.....	12.8-18.2
V.....	18.3-23.4
VI.....	23.5-28.5
VII.....	28.6-34.8
VIII.....	34.9-41.4
IX.....	41.5-51.6
X.....	51.7-81.1

Criterion J.—Peak month of index, 1929-31:

Group—	Month
I.....	December 1931
II.....	December 1930-November 1931
III.....	June 1930-November 1930
IV.....	January 1930-May 1930
V.....	November 1929-December 1929
VI.....	September 1929-October 1929
VII.....	June 1929-August 1929
VIII.....	April 1929-May 1929
IX.....	March 1929
X.....	January 1929-February 1929

TABLE 55.—*Correlation table of commodities distributed according to their rank by two criteria of wholesale price flexibility*

[Frequency of change compared with change per change. Commodities classified in 10 groups—group I least flexible, group X most flexible]

CRITERION M											
Group	I	II	III	IV	V	VI	VII	VIII	IX	X	Total
X.....		1	7	9	6	9	8	15	10	10	75
IX.....	6	8	6	8	9	3	8	3	3	4	58
VIII.....	10	13	8	8	9	6	3	3	2	3	65
VII.....	7	9	11	8	6	5	7	8	1	1	63
VI.....	7	9	6	7	6	10	6	4	4	2	61
V.....	3	3	5	10	6	3	11	9	7	3	60
IV.....	8	8	7	5	5	6	4	4	10	7	64
III.....	7	8	6	2	9	11	7	9	17	15	91
II.....	8	1	2	2	1		5	5	3	13	40
I.....											
Total.....	56	60	58	59	57	53	59	60	57	58	577

Source: Criterion B—Bureau of Labor Statistics. Criterion M—Bureau of Labor Statistics.

DESCRIPTIONS OF CRITERIA OF WHOLESALE-PRICE FLEXIBILITY

Criterion B.—Number of monthly changes in 39 changes, January 1926–April 1929:

Group—	Number of changes
I.....	0
II.....	1
III.....	2-3
IV.....	4-5
V.....	6-8
VI.....	9-13
VII.....	14-20
VIII.....	21-30
IX.....	31-37
X.....	38-39

Criterion M.—Average change (index points) per change, January 1926–April 1929:

Group—	Average change
I.....	0.0- 1.5
II.....	1.7- 2.6
III.....	2.3- 2.2
IV.....	2.7- 3.6
V.....	3.3- 3.2
VI.....	3.9- 4.8
VII.....	4.6- 5.6
VIII.....	5.7- 6.7
IX.....	6.8- 8.9
X.....	9.0-34.7

TABLE 56.—*Correlation table of commodities distributed according to their ranks by two criteria of wholesale price flexibility*

[Frequency of change compared with aggregate change less net change. Commodities classified in 10 groups—group I least flexible, group X most flexible]

		CRITERION N								
CRITERION B	Group	I, II, and III combined	IV	V	VI	VII	VIII	IX	X	Total
	X.....						5	27	43	75
	IX.....			2	2	4	16	19	15	58
	VIII.....		2	2	11	14	18	12	6	65
	VII.....	2	4	6	12	18	14	6	1	63
	VI.....	2	10	12	12	11	10	3		60
	V.....	8	10	15	12	11	2			58
	IV.....	17	20	11	9	6				63
	III.....	54	19	16	4	1	1			95
	II.....	40								40
	I.....	75								75
Total.....		198	65	64	62	65	66	67	65	652

Source: Criterion B—Bureau of Labor Statistics. Criterion N—Bureau of Labor Statistics.

DESCRIPTIONS OF CRITERIA OF WHOLESALE-PRICE FLEXIBILITY

Criterion B.—Number of monthly changes in 39 chances, January 1926–April 1929:

Group—	Number of changes
I.....	0
II.....	1
III.....	2-3
IV.....	4-5
V.....	6-8
VI.....	9-13
VII.....	14-20
VIII.....	21-30
IX.....	31-37
X.....	38-39

Criterion N.—Aggregate change (index points) less net change, January 1926–April 1929:

Group—	Difference
I, II, and III.....	0.0
IV.....	0.1- 8
V.....	9- 17
VI.....	18- 28
VII.....	29- 45
VIII.....	46- 79
IX.....	80-151
X.....	152 and up

TABLE 57.—*Correlation table of commodities distributed according to their ranks by two criteria of wholesale price flexibility*

[Amplitude of cyclical movement compared with aggregate change less net change. Commodities classified in 10 groups—group I least flexible, group X most flexible]

CRITERION N

CRITERION H	Group	I, II, and III combined	IV	V	VI	VII	VIII	IX	X	Total
	X.....	1	-----	2	1	6	6	16	31	63
	IX.....	3	2	2	-----	10	12	24	15	68
	VIII.....	6	2	6	9	11	14	9	6	63
	VII.....	11	4	6	9	10	10	9	6	65
	VI.....	13	9	12	17	9	1	1	1	63
	V.....	19	9	13	6	7	3	7	2	66
	IV.....	30	9	9	7	4	9	-----	-----	68
	III.....	32	14	5	-----	1	6	3	1	62
	II.....	43	9	5	4	2	1	-----	1	65
	I.....	38	8	5	7	5	3	-----	-----	66
Total.....		196	66	65	60	65	65	69	63	649

Source: Criterion H—Bureau of Labor Statistics. Criterion N—Bureau of Labor Statistics.

DESCRIPTIONS OF CRITERIA OF WHOLESALE PRICE FLEXIBILITY

Criterion H.—Percent decrease from average of 1929 and 1937 to 1932:

Group—	Percent decrease
I.....	28.5 increase to 0.4 decrease
II.....	0.5-7.4
III.....	7.5-12.7
IV.....	12.8-18.2
V.....	18.3-23.4
VI.....	23.5-28.5
VII.....	28.6-34.8
VIII.....	34.9-41.4
IX.....	41.5-51.6
X.....	51.7-81.1

Criterion N.—Aggregate change (index points) less net change, January 1926-April 1929:

Group—	Difference
I, II, and III.....	0.0
IV.....	0.1-8
V.....	9-17
VI.....	18-28
VII.....	29-45
VIII.....	46-79
IX.....	80-151
X.....	152 and up

TABLE 58.—*Correlation table of commodities distributed according to their ranks by two criteria of wholesale price flexibility*

[Change per change compared with aggregate change less net change. Commodities classified in 10 groups—group I least flexible, group X most flexible]

CRITERION N

CRITERION M	Group	I, II, and III combined	IV	V	VI	VII	VIII	IX	X	Total
	X.....	20	-----	3	4	6	3	2	18	56
	IX.....	13	4	11	6	5	3	2	15	59
	VIII.....	9	4	6	7	1	8	8	17	60
	VII.....	12	4	4	6	7	6	7	12	58
	VI.....	11	6	3	3	9	6	13	3	54
	V.....	16	5	2	3	6	10	15	-----	57
	IV.....	9	4	8	7	6	10	15	-----	59
	III.....	7	8	11	4	10	11	5	-----	56
	II.....	9	10	13	11	11	8	-----	-----	62
	I.....	17	20	5	10	3	1	-----	-----	56
Total.....		123	65	66	61	64	66	67	65	577

Source: Criterion M—Bureau of Labor Statistics. Criterion N—Bureau of Labor Statistics.

DESCRIPTIONS OF CRITERIA OF WHOLESALE PRICE FLEXIBILITY

Criterion M.—Average change (index points) per change, January 1926–April 1929:

Group—	Average change
I.....	0.0–1.6
II.....	1.7–2.2
III.....	2.3–2.6
IV.....	2.7–3.2
V.....	3.3–3.8
VI.....	3.9–4.5
VII.....	4.6–5.6
VIII.....	5.7–6.7
IX.....	6.8–8.9
X.....	9.0–34.7

Criterion N.—Aggregate change (index points) less net change, January 1926–April 1929:

Group—	Difference
I, II, and III.....	0.0
IV.....	0.1–8
V.....	9–17
VI.....	18–28
VII.....	29–45
VIII.....	46–79
IX.....	80–151
X.....	152 and up

APPENDIX II ¹

CONVENTIONAL PRICE LINES

INTRODUCTION

The maintenance of price lines in certain markets as an aspect of nonprice competition has been described briefly in chapter III above. Reference has also been made to the significance of the so-called "cash" discount common in the apparel market as related to price lines. This appendix is presented in order to describe these practices more fully.

No attempt has been made, in this appendix, to present appraisals of the economic significance of these practices. It is designed merely to assemble the salient facts relating to each of them.

The price behavior of many commodities is affected by the practice of "price lining." Conventional pricing practices have become more or less firmly established. In both the wholesale and retail markets the prices of these articles show a tendency to cluster at a limited number of specific points fixed by custom; quotations at intermediate levels are rare or absent.

The manifestations of this custom will be discussed for wearing apparel and consumers' durable goods, illustrative types of "price lines." There is evidence that the practice prevails also to some extent in other fields, such as certain kinds of drugs, toiletries, and certain packaged groceries.

WEARING APPAREL

The practice of price lining is perhaps most firmly established in the wholesale markets for wearing apparel. As changes occur in material or labor costs, or in styles, the quality of the garment is changed in order that it may be sold at one of these accepted levels. For example, if the material becomes more expensive, the cost of the finished garment can be maintained at the conventional level by the use of lower quality materials or less or cheaper trimmings, or by decreasing the amount of labor.

Wholesale price lines are apparently somewhat more rigidly maintained for inexpensive and medium-priced merchandise than for apparel of higher quality. It is reported that manufacturers producing dresses to wholesale at \$22.75 and above change their lines from year to year in order to maintain the same quality.

Corsets and brassieres.—The corset and brassiere industry is an excellent example of an industry whose wholesale price lines have

¹ Appendix II was prepared by Laura Mae Brown. Acknowledgment is due Miss Viola Darnell, S. Kann Sons Co., Miss Elizabeth Farrell, Julius Garfinckel & Co., and Mr. W. B. Stringham, General Electric Supply Co., for their assistance in supplying certain data used in this analysis.

become fixed by custom. Under N. R. A., conformity with these price lines was made mandatory. The code for this industry, as approved on August 14, 1933, stipulated:

"Wholesale prices.—To maintain established trade practices and to limit the multiplication of numbers, but without any attempt at price fixing, each person being free to determine the value to be given at each price, the following shall be the wholesale prices, per dozen, for sale to retailers (except chain stores selling up to \$1 retail):

\$2.00 doz.	\$8.50 doz.	\$27.00 doz.
2.25	10.50	30.00
3.25	12.00	33.00
4.00	15.00	36.00
4.25	16.50	42.00
4.50	18.00	48.00
6.00	21.00	54.00
7.00	22.50	60.00
8.00	24.00	66.00 and up."

Testimony at the hearings indicated that the industry as a whole had for many years observed these wholesale price lines, which corresponded to similar price lines in the retail market, and that the latter in turn reflected the accumulated experience of retailers in dealing with the consumer.

To an extent, therefore, the inclusion of these wholesale prices in the code was simply a recognition of a practice long established through the cooperation of manufacturers and retailers. Presumably some deviations from these lines had appeared during the buyers' market of 1932-33; the code provision may have been designed to prevent such deviations. The manufacturers maintained that, as a result of the stabilization of prices, the retailer could carry a much more complete selection of sizes at each price than would be possible if prices varied more. They contended that customers benefited from such a practice. They also argued that the setting of wholesale price lines was not equivalent to fixed prices since the manufacturer was completely unrestricted as to the quality of the garment he might sell at each price, and since a price line was not restricted to a garment meeting a standard specification.

The same general practice is followed to a considerable extent in the retail markets, although price lines are less universal than in the wholesale markets. The extent of uniformity is indicated by the retail prices quoted to the Bureau of Labor Statistics, as of June 15, 1938, by representative retailers in 32 cities. Of the 114 quotations reported for women's "medium quality" woven elastic girdles retailing from \$2.95 to \$5.50, 99, or 87 percent, were at two prices—\$3.50 and \$5. One hundred ninety-two, or 85 percent, of 227 prices for foundation garments were at the \$3.50 and \$5 lines. Eighty-one percent of the 142 prices reported for brassieres retailing between 94 cents and \$1.50 were at the \$1 line; 11 percent at \$1.50.

¹ National Recovery Administration, Codes of Fair Competition, vol. I, p. 76, "Corset and Brassiere Industry," sec. 9 (i).

The actual distributions of these prices follow:

TABLE 59.—*Distribution of retail prices of girdles, foundation garments, and brassieres*

Girdles		Foundation garments		Brassieres	
Price	Number of quotations	Price	Number of quotations	Price	Number of quotations
\$2.95.....	4	\$3.19.....	1	\$0.94.....	1
\$2.98.....	2	\$3.25.....	1	\$1.....	115
\$3.39.....	1	\$3.29.....	1	\$1.25.....	9
\$3.50.....	32	\$3.39.....	1	\$1.29.....	1
\$3.59.....	1	\$3.50.....	77	\$1.50.....	16
\$3.95.....	2	\$3.59.....	2	Total.....	142
\$3.98.....	1	\$3.95.....	4		
\$4.....	1	\$3.98.....	16		
\$4.69.....	1	\$4.69.....	1		
\$5.....	67	\$4.95.....	1		
\$5.50.....	2	\$4.98.....	3		
Total.....	114	\$5.....	115		
		\$5.29.....	1		
		\$5.30.....	1		
		\$5.95.....	1		
		\$5.98.....	1		
		Total.....	227		

Dresses.—Wholesale price lines are also maintained in the market for women's dresses. Many firms manufacture dresses to sell at one wholesale price line only; those producing inexpensive garments tend to maintain the same price lines for many years. This practice has become so well established that manufacturers are often described by referring to the price lines in which they specialize; e. g., one may be known as a "\$10.75 house" or a "\$14.75 house."

There are two branches of the dress industry. The first is the wash frock or "house dress" group. This branch of the industry originated with the manufacture of house dresses and aprons—cotton garments which had practically no "style." It now manufactures both cotton and rayon dresses, practically all of which are styled for street as well as for house wear. Producers of these garments usually own their own plants and ordinarily are not located in the large metropolitan centers.

The second branch of the industry, usually known as the women's dress industry proper, originated with the manufacture of silk dresses. Most of the production of this group of manufacturers is of rayon, wool, linen, and the more expensive cotton materials, since fewer silk dresses are now sold than in former years. Many of these dresses are manufactured by contractors; a large percentage of the total volume is produced in New York City in what is known as "Chinatown." The wash frock industry is more highly mechanized than is the dress industry proper and the frocks manufactured by the former group tend toward the more tailored styles.

The more usual price lines quoted by wash frock manufacturers at the present time are: \$4.75, \$6.75, \$8.50, \$12.50, \$16.75, \$22.50, \$30.00, \$31.50, \$33.00, \$42.00, \$45.00 per dozen.

All these prices have been "standard" for many years, with the exception of the \$31.50 line which was introduced about 1931. Close-

outs, as well as regular merchandise, are priced at these lines. Close-outs are often made from left-over materials which would ordinarily have been used for more expensive lines; they are sold in lower wholesale price lines during the latter part of a season in order to reduce material inventories and to keep labor more steadily employed. It is not unusual for merchandise which would have sold at \$45 per dozen at the beginning of a season to be sold at \$22.50 per dozen at the end of the season. This merchandise is used to enlarge the stocks in the retail stores for end-of-season clearance sales. Thus there are in effect price reductions as the season progresses, but they are made in conventional steps downward.

Retail price lines are also common in the wash frock market. It is understood that agreements are often made by buyers in competing stores to observe uniform price "endings." Such agreements usually affect the marking of lower-priced merchandise only.

The importance of retail price lines in this field is indicated by the data compiled by the Retail Price Division of the Bureau of Labor Statistics. Of the 258 prices reported during June 1938, for dresses retailing between \$1.50 and \$3, 201, or 78 percent, were on four price lines: \$1.95, \$1.98, \$2.00, and \$2.98. The distribution of these 258 prices follows:

TABLE 60.—*Distribution of retail prices for wash frocks*

Price:	Number of quotations	Price:	Number of quotations
\$1.50-----	2	\$1.99-----	11
\$1.59-----	1	\$2.00-----	39
\$1.69-----	11	\$2.25-----	3
\$1.79-----	1	\$2.77-----	1
\$1.86-----	1	\$2.95-----	12
\$1.88-----	2	\$2.98-----	25
\$1.94-----	2	\$2.99-----	2
\$1.95-----	38	\$3.00-----	7
\$1.97-----	1		
\$1.98-----	99	Total-----	258

The "accepted" wholesale price lines in the dress industry proper at the present time are: \$1.87½, \$2.25, \$2.87½, \$3.75, \$4.75, \$6.75, \$7.75, \$8.75, \$10.75, \$12.75, \$14.75, \$16.75, \$19.75, \$22.75, \$29.75, \$39.75 each and over.

Before 1931 or 1932, prices were 25 cents lower for all garments selling at \$4.75 or over (e. g., the lines were \$4.50, \$6.50, etc.). They were increased to their present levels under an agreement instituted by the Half Size Guild, the Dress Creators' League of America, and the Party Dress Guild.³

The development of rayon dress materials has made possible the introduction of cheaper dresses during the past 10 years. About 1930 the first \$2.25 street dresses were introduced and at the present time a \$1.87½ line is on the market. The depression made this new field a very popular one; practically all wholesale lines below \$4.75 have been introduced within the past 10 years.

The retail market shows concentration at the 95-cent price ending. Of the 215 prices between \$14.75 and \$19.95 reported to the Bureau in June 1938 on women's "medium quality" rayon or silk street

³ N. R. A. Code Hearings on the Dress Manufacturing Industry, January 7, 1935, pp. 141 and 186.

dressess, 148, or 69 percent, were on the \$14.95, \$16.95, and \$17.95 lines. These quotations were distributed in the following manner:

TABLE 61.—*Distribution of retail prices for women's medium-quality dresses*

Retail price:	Number of quotations	Retail price:	Number of quotations
\$14.75-----	3	\$16.98-----	1
\$14.88-----	1	\$16.99-----	1
\$14.95-----	56	\$17.50-----	9
\$14.98-----	3	\$17.95-----	23
\$15.00-----	11	\$18.00-----	1
\$15.93-----	1	\$19.75-----	2
\$16.50-----	9	\$19.95-----	9
\$16.75-----	16		
\$16.95-----	69	Total-----	215

Of 242 prices reported in June 1938 on lower quality rayon street dresses retailing from \$5.88 to \$12.95, 63 percent were quoted at four prices—\$5.95, \$6.95, \$7.95, and \$10.95. The distribution follows:

TABLE 62.—*Distribution of retail prices for women's cheap dresses*

Retail price:	Number of Quotations	Retail price:	Number of Quotations
\$5.88-----	1	\$8.94-----	1
\$5.94-----	1	\$8.95-----	4
\$5.95-----	24	\$8.98-----	1
\$5.98-----	14	\$9.75-----	3
\$5.99-----	3	\$9.95-----	1
\$6.50-----	5	\$10.00-----	1
\$6.60-----	1	\$10.75-----	2
\$6.90-----	14	\$10.95-----	36
\$6.95-----	35	\$10.98-----	3
\$6.98-----	7	\$10.99-----	1
\$6.99-----	10	\$11.95-----	1
\$7.95-----	57	\$12.95-----	4
\$7.98-----	11		
\$8.00-----	1	Total-----	242

According to the above distributions, the important retail price lines for women's medium and lower priced silk and rayon dresses are: \$17.95, \$16.95, \$14.95, \$10.95, \$7.95, \$6.95, and \$5.95.

One feature of these last two distributions seems noteworthy. There is a complete avoidance of the use of any price between 1 cent and 49 cents over the even dollar. In other words, of the 457 quotations included in these last two tables, every one which is not quoted at an even dollar is at least 50 cents over the dollar.

Presumably this reflects the retailers' appraisal of consumer psychology. It may well be true that to many consumers there is a smaller psychological gap between, say, \$16.25 and \$16.98 than between \$16.98 and \$17.15. That retail pricing should reflect this probably well warranted belief is natural, but the complete unanimity shown by these distributions is very striking.

Girls' cotton dresses.—Girls' cotton dresses are also sold at "price lines." The following distribution of 523 retail prices reported to the Bureau as of June 15, 1938, for girls' cotton dresses retailing from 98 cents to \$2 shows that 24 percent retailed at \$1.98, 21 percent at \$1, and 12 percent each at \$1.19 and \$1.95. Only 31 percent of the quotations were at other prices.

TABLE 63.—*Distribution of retail prices for girls' cotton dresses*

Retail price:	Number of quotations	Retail price:	Number of quotations
\$0.98-----	31	\$1.65-----	1
\$1.00-----	109	\$1.69-----	2
\$1.09-----	8	\$1.83-----	2
\$1.10-----	2	\$1.95-----	65
\$1.11-----	2	\$1.97-----	2
\$1.15-----	26	\$1.98-----	128
\$1.19-----	65	\$1.99-----	12
\$1.25-----	19	\$2.00-----	44
\$1.29-----	2		
\$1.49-----	2	Total-----	523
\$1.59-----	1		

Coats.—A third example of wearing apparel sold at rigid price lines is women's and misses' coats. The most usual wholesale prices in this field are: \$6.75, \$10.75, \$16.75, \$22.75, \$26.75, \$39.75 each.

In addition the following prices are also quoted by many houses, applying to both trimmed and untrimmed coats: \$3.75, \$4.75, \$5.75, \$8.75, \$12.75, \$14.75, \$19.75, \$29.75, \$49.75 each.

Women's hose.—The importance retailers attach to hosiery price lines is indicated in the following:

It seems taken for granted that the 79-cent retail price is too firmly entrenched to be fooled with and that any revisions on goods in this price class will be in the nature of construction changes.⁴

The prices reported to the Bureau in June 1938 demonstrate the importance of the 79-cent line and the \$1 line. One hundred fifty-four, or 39 percent, of the 396 prices quoted were on the \$1 hose, 30 percent on the 79 cent, 11 percent on the 69 cent, and 7 percent on the 89 cent. Only 13 percent of the prices quoted were at other levels.

TABLE 64.—*Distribution of retail prices for women's hose*

Price per pair	3-thread, 45-gauge	4-thread, 42-gauge	7-thread, 42-gauge	Total	Price per pair	3-thread, 45-gauge	4-thread, 42-gauge	7-thread, 42-gauge	Total
\$0.69----	1	17	25	43	\$0.89----	6	9	12	27
\$0.75-----		2		2	\$0.94----	1			1
\$0.77-----	1			1	\$0.95----	2		1	3
\$0.78-----		1		1	\$0.97----	1			1
\$0.79-----	13	56	50	119	\$1.00----	95	27	32	154
\$0.80-----			1	1	\$1.09----	1			1
\$0.84-----			1	1	\$1.15----	15	1	3	19
\$0.85-----	3	5	10	18					
\$0.88-----	2	1	1	4	Total-----	141	119	136	396

Girls' anklets.—Quotations for girls' mercerized anklets reported on June 15, 1938, to the Bureau show price lines at lower levels. Forty-seven percent of the group retailed for 29 cents; 26 percent retailed for 25 cents.

TABLE 65.—*Distribution of retail prices for girls' anklets*

Retail price:	Number of quotations	Retail price:	Number of quotations
\$0.25-----	33	\$0.33-----	16
.27-----	1	.35-----	5
.28-----	3	.37-----	1
.29-----	60	.39-----	7
.30-----	1		
.31-----	1	Total-----	128

⁴ Knit Goods Weekly, October 17, 1938, p. 10.

Men's work shirts.—In men's ready-to-wear, retail price lines are important in the pricing of men's suits, business shirts, underwear, socks, neckties, and felt hats. The retail prices of men's work clothing also give evidence of price lining, although it is not as marked as for women's clothing. The 349 retail prices reported to the Bureau on men's work shirts retailing from 39 cents to \$1 in June 1938 are generally grouped at 10-cent intervals between 39 cents and 89 cents:

TABLE 66.—*Distribution of retail prices for men's work shirts*

Retail price:	Number of quotations	Retail price:	Number of quotations
\$0.39-----	13	\$0.80-----	1
.45-----	2	.82-----	1
.47-----	1	.85-----	4
.49-----	22	.88-----	1
.50-----	4	.89-----	50
.55-----	2	.90-----	1
.58-----	1	.92-----	1
.59-----	61	.94-----	2
.65-----	1	.95-----	5
.67-----	3	.98-----	39
.68-----	1	1.00-----	36
.69-----	55		
.75-----	7	Total-----	349
.79-----	35		

One retailer reported that the chain-store organization which he represented found that goods which were changed in price sold better if they were increased or reduced to an "accepted" price line rather than to some intermediate price. For instance, shirts which had been selling for 49 cents would sell better when placed in the 59-cent group, a price line to which their customers had become accustomed, than if they were priced at 54 cents. Similarly, he said it was necessary to observe customary lines even during sales.

It has been pointed out that the retail price lines found in women's ready-to-wear are the result of two factors: (1) The rigidity of wholesale price lines, and (2) the acceptance of "customary" price lines by consumers with the result that retailers consider it expedient to observe these conventional pricing practices. For men's work shirts, however, only the second factor is significant since the wholesale quotations are flexible, usually changing when costs of production change.

YARD GOODS

Retail price lines are also followed in the merchandising of yard goods. Buyers who have established price lines on yard goods are anxious to purchase cloths which can be retailed at established prices. In order to maintain these lines in the face of changes in costs quality is necessarily altered, but the variations are seldom great enough to be evident to the average consumer. In the case of woollens, for example, the quality of the cloth may be changed in any of the following ways: (1) Changing the construction of the cloth; (2) using another grade of wool; or (3) introducing some reworked wool or rayon. In the case of cotton goods, the price may be stabilized by varying the quality of the yarn used, and, if the cloth is printed, by varying the number of colors and the elaborateness of the design.

Retail prices on printed percales, 80 x 80 construction, reported to the Bureau as of December 1938 indicate the prevalence of price lining. Two price lines—19 cents and 25 cents—accounted for 114 of the 134 quotations.

TABLE 67.—*Distribution of retail prices for printed percales*

Retail price:	Number of quotations	Retail price:	Number of quotations
\$0.14-----	1	\$0.23-----	2
\$0.15-----	3	\$0.24-----	1
\$0.17-----	6	\$0.25-----	68
\$0.19-----	46		
\$0.21-----	1	Total-----	134
\$0.22-----	6		

CONSUMERS' DURABLE GOODS

The retail list prices of certain kinds of consumers' durable goods also show evidence of established price lines, although the practice is not as universal in this field as in the apparel markets. Many electrical appliances, for example, are regularly priced at 5 cents under the even \$10 mark. As in the case of apparel, price lines are more common in connection with the sale of merchandise designed for consumers in the low and middle income brackets than for goods destined for the less price-conscious luxury trade.

Washing machines and vacuum cleaners.—In the sale of both washing machines and vacuum cleaners it seems to be the accepted practice for retail prices to be quoted at 5 cents under the even \$10 mark. For example, electric vacuum cleaners are usually priced at \$10 intervals from \$39.95 to \$79.95. Washing machines show the same general pattern but the range extends materially above the \$79.95 level.

As in the case of conventional price endings for apparel, this practice is largely the outgrowth of manufacturers' and distributors' appraisal of consumer psychology. It is generally contended by these trades that intermediate price levels are less satisfactory in stimulating sales. Thus, if the cost of producing and distributing a certain vacuum cleaner warranted a price of \$61, it would probably be marked at \$59.95; similarly, if its cost indicated a retail price of \$57 it would still sell much better at \$59.95. The uniformity with which this practice is observed illustrates at least that these industries are convinced of the validity of their interpretation of the consumer's reaction.

Radios.—The more common retail list prices for radios follow: \$12.95, \$17.95, \$24.95, \$29.95, \$39.95, \$49.95, \$59.95, \$69.95, \$79.95, \$89.95, and \$129.95.

Recently a small portable radio designed to retail at \$9.95 has been introduced by many manufacturers.

Refrigerators.—There is also some evidence of the maintenance of price lines for electric refrigerators. In this case, however, there is somewhat more variation both as between different makes and at different periods of time. Table 21 compares the retail list prices for the 1938 models of nine nationally advertised refrigerators. (See p. 162 supra.)

THE CASH DISCOUNT IN THE APPAREL MARKET

It has been pointed out in chapter III of this study (see p. 74 supra) that wholesale price lines for apparel, and particularly for women's apparel, should be interpreted in the light of the standard so-called cash discount. For most lines of women's apparel, manufacturers regularly grant a discount of 8/10 EOM off the accepted price line.⁵

An indication of the extent to which this discount is actually observed for different kinds of goods has been obtained from data published by the National Retail Dry Goods Association.⁶ According to the data compiled, the 8/10 EOM terms are being granted on the following items of women's, misses', and girls' clothing:

- (1) Neckwear and scarfs.
- (2) Millinery.
- (3) Corsets and brassieres.
- (4) Silk and muslin underwear and slips.
- (5) Negligees and robes.
- (6) Coats and suits.
- (7) Dresses.
- (8) Blouses and sportswear.
- (9) Girls' wear.
- (10) Aprons, housedresses, and uniforms.
- (11) Furs.

Although this allowance is usually called a cash discount it is in reality a combination cash and trade discount. This interpretation is indicated both by its size, which is unusually high for a strictly cash discount, and also by the fact that failure to pay by the date stipulated does not usually entail the loss of the entire discount. Instead, if payment is delayed, the terms are usually changed to 7/10/60.⁷ This is equivalent to charging interest at the rate of 6 percent per annum for the additional 60 days allowed.

As in the case of the price lines themselves this discount largely represents the crystallization of business custom. It was, however, definitely formalized about 20 years ago by a conference of retailers and manufacturers. Later (about 1925) the relative bargaining power of the retailers seems to have increased, with the result that the discount was increased to 10/10 EOM in a substantial portion of the market, particularly in the lower price lines. Under N. R. A., however, manufacturers succeeded in restoring the terms of their old level of 8/10 EOM; since that time this has been the prevailing practice. There are, however, occasional variations from these terms. It is understood that very large buyers are sometimes granted 10/10 EOM terms (representing an advantage of two percent.) Some merchants doing business in small communities are believed to receive

⁵ I. e., a discount of 8 percent if payment is made within 10 days after the end of the month during which the sale was completed.

⁶ 1937 Departmental Merchandising and Operating Results of Department and Specialty Stores, published by the Controllers' Congress of the National Retail Dry Goods Association. These figures show the typical performance figure in each of the separate departments for the items listed. Cash discounts from which any "loading" discounts had been eliminated were expressed in the National Retail Dry Goods Association report as a percentage of sales. In order to calculate the cash discount as a percentage of cost (the figure to which the 8-percent discount is applied), the "typical" figures for both the cumulative mark-ons and mark-downs had to be considered, since each percentage represents the typical performance rather than the actual performance of any single store.

⁷ I. e., a discount of 7 percent if payment is made within 10 days of the expiration of a 60-day period.

a discount of only 3 percent. In this way changes in discount impart a limited degree of flexibility to conventional price lines.

The question may be raised as to whether a discount so uniformly granted has any real significance in the market other than that implied in an equivalent reduction in the nominal price lines. There is some evidence, however, that there is a difference in the ultimate result, particularly from the point of view of the consumer. It is standard bookkeeping practice in many department stores to apply this discount to the expenses of the "front" office rather than to the credit of the specific department involved.⁸ If a buyer should, for any reason, fail to obtain the standard discount, and if office procedure is based upon the practice just mentioned, it is common to "load" the buyer's cost. For example, assume that the terms received on a \$10.75 dress are only 6/10 EOM. In such a case the dress would be charged to the department at \$10.98 and the difference credited to the "front" office.⁹

This practice in turn influences the retail selling price. The operating results of each department are computed upon the basis of wholesale price level. Consequently, it becomes incumbent upon the buyer to adjust his mark-up accordingly, if the department is to show an adequate operating profit.

Opinions as to the actual significance of this situation differ. It is contended on the one hand that it results in a higher price to the consumer for the commodities affected because of the pressure upon the buyer to show a profit based upon a fictitious cost. It is suggested on the other hand that, if this practice did not prevail, the result would be much the same because larger operating profits would be required from the individual departments in order to defray necessary administrative expenses. Perhaps what really happens is that retail prices in the departments affected by this practice are somewhat higher than they would otherwise be, while prices in other departments are correspondingly lower. In any event the situation is significant as an illustration of the manner in which retail price levels may be affected by business convention.

⁸ Recently, however, there seems to be some trend in the opposite direction.

⁹\$10.75 less 6 percent equals \$10.10. \$10.98 less 8 percent equals \$10.10.

APPENDIX III

Statistical data supporting charts

Sensitive and insensitive prices

[1926=100]

(Chart I based on the following statistical data appears on p. 24)

INDEXES OF WHOLESALE PRICES OF SULFUR, CRUDE

Relative	January	February	March	April	May	June	July	August	September	October	November	December	Year
1926	93.3	93.3	96.1	86.4	104.3	104.3	104.3	104.3	98.8	98.8	98.8	98.8	100.0
1927	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8
1928	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8
1929	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8
1930	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8
1931	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8
1932	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8
1933	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8
1934	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8
1935	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8
1936	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8
1937	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8
1938	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	90.1	87.9	87.9	96.1
1939	87.9	87.9	87.9	87.9	87.9	87.9	87.9	-----	-----	-----	-----	-----	-----

INDEXES OF WHOLESALE PRICES OF BRICK: LIGHT COLORED FRONT, GOOD GRADE

1926	103.8	103.8	103.8	101.1	101.1	101.1	98.4	98.4	98.4	95.4	95.7	95.7	100.0
1927	93.0	93.0	93.0	93.0	93.0	93.0	93.0	93.0	93.0	93.0	93.0	95.7	93.3
1928	93.0	90.3	87.6	87.6	87.6	87.6	84.9	87.6	84.9	84.9	84.9	84.9	87.2
1929	84.9	84.9	84.9	84.9	84.9	84.9	82.2	82.2	82.2	82.2	82.2	82.2	83.6
1930	82.2	82.2	82.2	82.2	82.2	82.2	82.2	82.2	82.2	82.2	82.2	82.2	82.2
1931	82.2	79.5	79.5	79.5	79.5	79.5	79.5	79.5	79.5	76.9	76.9	76.9	79.0
1932	76.2	76.9	76.9	76.9	75.8	74.2	72.2	74.2	74.2	74.2	74.2	74.2	75.1
1933	74.2	74.2	74.2	74.2	74.2	74.2	76.2	82.2	82.2	82.2	82.2	82.2	77.7
1934	83.9	84.9	87.0	88.0	89.0	89.0	89.0	89.0	89.0	89.0	89.0	89.0	88.0
1935	89.0	89.0	89.0	89.0	89.0	89.0	89.0	89.0	89.0	84.9	83.6	83.6	87.5
1936	80.2	80.2	82.4	82.9	81.6	82.9	82.9	82.9	82.9	82.9	84.9	86.0	82.8
1937	89.3	94.4	94.4	94.4	94.4	94.4	94.4	94.4	94.4	87.6	84.9	84.9	91.8
1938	84.9	84.0	84.9	84.9	87.1	87.6	87.6	87.6	89.0	89.7	90.3	90.3	87.4
1939	90.3	90.3	90.3	90.3	90.3	90.3	90.3	-----	-----	-----	-----	-----	-----

INDEXES OF WHOLESALE PRICES OF WHEAT, NO. 2, HARD

1926	120.8	115.3	106.6	107.4	104.5	102.7	91.7	88.1	89.3	92.5	91.8	91.8	100.0
1927	92.0	90.7	88.7	87.4	95.4	99.4	93.6	93.5	88.4	89.5	90.1	91.1	91.7
1928	93.3	92.3	96.5	103.5	109.5	103.4	86.0	73.3	72.9	76.5	76.4	76.1	88.5
1929	77.4	80.3	78.6	74.6	68.4	69.8	85.5	82.2	82.9	82.1	78.9	83.0	78.8
1930	79.4	74.4	68.0	68.0	66.4	62.6	54.7	55.0	52.9	50.7	46.2	47.5	60.1
1931	46.7	46.7	47.3	49.0	49.1	44.5	31.3	29.7	30.7	33.3	40.9	37.3	40.5
1932	36.6	37.1	34.6	36.6	36.8	30.3	31.2	32.7	32.6	30.6	29.0	28.3	33.0
1933	28.8	29.5	32.8	40.3	47.6	53.0	66.5	59.3	58.7	54.8	56.1	54.2	48.4
1934	56.5	56.5	54.8	51.1	55.1	61.6	63.5	71.3	71.5	68.2	68.2	70.3	62.3
1935	67.3	67.2	64.5	68.7	66.7	59.3	64.8	69.3	76.5	79.6	74.1	74.4	69.5
1936	74.5	72.5	71.0	67.8	61.5	63.5	74.8	81.2	80.4	81.6	81.5	89.5	75.1
1937	92.7	91.1	92.9	91.5	88.6	81.8	82.1	73.5	73.8	69.1	63.1	65.2	80.3
1938	69.0	66.8	61.2	56.3	52.0	54.5	47.0	43.9	43.3	43.0	42.8	45.5	51.9
1939	47.2	46.3	45.8	46.4	50.8	49.2	44.5	-----	-----	-----	-----	-----	-----

Source: Bureau of Labor Statistics.

Wholesale prices of selected commodities

[1926=100]

(Chart II based on the following statistical data appears on p. 25)

EGGS, FIRSTS, NEW YORK

Year	January	February	March	April	May	June	July	August	September	October	November	December	Yearly average
1926...	107.8	86.9	81.1	89.2	86.0	84.8	82.3	88.3	106.2	113.6	140.4	135.0	100.0
1927...	117.8	89.8	70.5	69.1	65.8	65.1	69.6	79.0	96.3	111.1	122.6	127.5	89.9
1928...	126.4	91.2	80.4	79.8	83.5	82.8	85.0	88.1	92.8	91.2	103.0	102.8	92.6
1929...	102.2	115.5	92.0	78.2	87.5	86.0	91.1	97.0	102.0	111.0	135.7	142.1	103.5
1930...	118.2	98.8	72.3	75.5	65.6	68.4	62.9	70.2	70.6	74.4	87.2	80.7	78.2
1931...	68.0	56.6	61.5	56.6	53.1	52.2	56.6	62.6	67.8	67.9	80.0	75.0	63.2
1932...	52.4	48.4	39.4	39.7	41.2	39.7	42.2	48.8	58.0	67.2	86.7	88.3	54.3
1933...	64.3	38.8	38.3	37.7	39.6	37.4	43.0	39.9	49.9	56.5	72.3	60.5	48.4
1934...	62.4	51.3	49.7	46.9	46.1	45.7	46.9	58.4	62.1	66.5	77.4	74.7	57.2
1935...	83.6	84.4	60.2	67.5	70.5	68.0	68.6	72.9	76.0	75.9	82.4	75.9	73.9
1936...	68.1	85.3	58.9	57.5	60.7	62.0	63.8	66.6	69.3	76.1	90.7	90.8	70.8
1937...	70.2	63.7	65.1	63.4	57.9	57.9	59.9	59.6	65.6	66.3	73.3	71.2	64.5
1938...	63.0	52.0	50.4	50.8	58.8	57.9	60.2	62.2	70.9	74.9	81.6	78.1	63.4
1939...	55.2	49.8	49.1	48.4	46.2	45.5	45.7	-----	-----	-----	-----	-----	-----

COTTON GOODS

1926...	107.5	106.6	104.9	103.5	101.0	98.6	98.1	99.0	99.4	96.2	93.7	91.8	100.0
1927...	90.1	90.7	91.1	90.9	92.9	94.5	95.6	100.1	106.8	106.2	104.3	102.6	97.1
1928...	101.3	100.1	99.7	99.6	100.7	100.5	101.5	100.7	99.2	99.9	100.5	100.9	100.4
1929...	100.4	99.8	100.6	99.4	98.5	97.8	98.2	98.2	98.4	98.5	97.4	96.2	98.8
1930...	94.7	92.8	90.3	89.6	89.0	87.2	83.9	81.1	78.6	77.0	77.5	75.6	84.7
1931...	73.5	73.1	72.4	71.4	69.2	67.6	66.8	64.0	61.5	59.7	58.1	56.4	66.1
1932...	55.8	56.4	56.2	55.1	52.9	51.0	50.0	52.6	57.9	56.2	53.6	51.7	54.0
1933...	50.1	49.1	50.0	50.7	57.9	67.1	80.2	93.5	91.3	88.8	86.0	85.5	71.2
1934...	86.5	88.6	89.1	88.2	86.3	86.0	85.1	86.4	87.8	86.6	84.4	84.3	86.5
1935...	84.1	83.3	82.4	81.8	82.7	82.5	82.0	82.5	83.2	84.6	85.8	86.0	83.4
1936...	80.4	78.1	77.1	76.2	75.5	75.4	78.7	79.5	80.0	82.0	85.5	90.3	80.3
1937...	91.9	91.3	94.0	95.1	92.6	89.7	86.8	82.2	76.8	73.1	70.5	68.7	84.3
1938...	68.2	67.6	67.5	65.7	65.0	63.9	65.1	64.4	64.1	64.6	65.1	64.6	65.4
1939...	64.3	63.7	63.7	63.4	63.3	64.1	65.1	-----	-----	-----	-----	-----	-----

DOMESTIC RAYON

1926...	110.5	110.5	110.5	110.5	110.5	110.5	91.2	91.2	91.2	91.2	91.2	91.2	100.0
1927...	80.1	80.1	81.2	82.9	82.9	82.9	82.9	82.9	82.9	82.9	82.9	82.9	82.3
1928...	82.9	82.9	82.9	82.9	82.9	82.9	82.9	82.9	82.9	82.9	82.9	82.9	82.9
1929...	82.9	80.1	71.8	71.8	71.8	69.8	63.6	63.6	63.6	63.6	63.6	63.6	68.9
1930...	63.6	63.6	63.6	63.6	63.6	63.6	59.1	52.5	52.5	52.5	52.5	52.5	58.5
1931...	47.0	41.4	41.4	41.4	41.4	41.4	41.4	41.4	41.4	41.4	41.4	41.4	41.9
1932...	41.4	41.4	41.4	41.4	40.3	35.9	31.8	30.9	33.2	33.2	33.2	33.2	36.5
1933...	33.2	33.2	33.2	27.6	30.4	31.8	34.5	35.9	35.9	35.9	35.9	35.9	33.6
1934...	35.9	35.9	35.9	35.9	31.9	30.4	30.4	30.4	30.4	30.4	30.4	31.2	32.4
1935...	33.2	33.2	33.2	32.1	30.4	30.4	30.4	31.2	31.5	31.5	31.5	31.5	31.7
1936...	31.5	31.5	31.5	31.5	31.5	31.8	33.2	33.2	33.2	33.2	33.2	33.2	32.4
1937...	33.2	33.2	33.2	34.8	34.8	34.8	34.8	34.8	34.8	34.8	34.8	34.8	34.4
1938...	33.0	29.8	29.8	29.8	28.7	27.1	27.1	28.2	28.2	28.2	28.2	28.2	28.9
1939...	28.2	28.2	28.2	28.2	28.2	28.2	28.2	-----	-----	-----	-----	-----	-----

Source: Bureau of Labor Statistics.

Wholesale prices of selected commodities—Continued

[1926=100]

(Chart III based on the following statistical data appears on p. 26)

PHOSPHATE ROCK

Year	Janu- ary	Febru- ary	March	April	May	June	July	Aug- ust	Sep- tem- ber	Octo- ber	Nov- em- ber	De- cem- ber
1926.....	94.6	99.5	103.5	101.1	100.3	100.3	100.3	100.3	100.3	100.3	100.3	100.3
1927.....	95.5	95.5	95.5	95.5	95.5	95.5	95.5	95.5	95.5	95.5	95.5	95.5
1928.....	95.5	95.5	95.5	95.5	95.5	95.5	95.5	97.9	98.7	98.7	98.7	98.7
1929.....	98.7	98.7	98.7	98.7	98.7	98.7	98.7	98.7	98.7	98.7	98.7	98.7
1930.....	98.7	98.7	98.7	98.7	98.7	98.7	98.7	98.7	98.7	98.7	98.7	98.7
1931.....	98.7	98.7	98.7	98.7	98.7	98.7	98.7	98.7	98.7	98.7	98.7	98.7
1932.....	98.7	98.7	98.7	98.7	98.7	98.7	98.7	98.7	98.7	98.7	98.7	98.7
1933.....	98.7	98.7	98.7	98.7	98.7	98.7	98.7	95.9	87.9	89.2	89.2	89.2
1934.....	90.8	90.8	90.8	90.8	90.8	93.3	103.5	103.5	103.5	103.5	103.5	104.4
1935.....	108.3	108.3	108.3	108.3	108.3	108.3	108.3	108.3	108.3	108.3	108.3	61.3
1936.....	58.9	58.9	58.9	58.9	58.9	58.9	58.9	58.9	58.9	58.9	58.9	58.9
1937.....	58.9	58.9	58.9	58.9	58.9	58.9	58.9	58.9	58.9	58.9	58.9	58.9
1938.....	58.9	58.9	58.9	58.9	58.9	58.9	58.9	58.9	58.9	58.9	58.9	59.2
1939.....	60.5	60.5	60.5	60.5	60.5	60.5	60.5	-----	-----	-----	-----	-----

ANTHRACITE

Year	Janu- ary	Febru- ary	March	April	May	June	July	Aug- ust	Sep- tem- ber	Octo- ber	Nov- em- ber	De- cem- ber
1926.....	113.7	102.0	101.2	98.1	97.6	97.3	97.4	98.1	98.4	98.4	98.8	98.8
1927.....	99.1	98.9	96.8	93.8	93.6	94.8	95.2	95.7	97.0	96.9	96.9	96.8
1928.....	94.8	95.3	94.8	89.7	89.6	90.4	90.5	90.3	91.2	91.2	91.2	91.2
1929.....	91.6	91.6	91.4	88.1	87.4	88.1	89.1	90.0	90.6	91.2	91.2	91.2
1930.....	91.2	91.2	91.2	90.2	86.7	85.8	86.5	88.0	89.1	89.7	89.6	89.6
1931.....	88.9	88.9	88.4	86.4	87.5	88.8	90.8	92.2	94.3	94.2	94.2	94.8
1932.....	94.8	94.8	89.9	85.7	85.6	85.3	84.5	86.0	87.7	88.7	88.8	88.7
1933.....	88.7	88.7	88.3	81.4	78.5	76.8	77.9	79.2	82.0	81.8	81.8	81.5
1934.....	81.5	81.2	81.2	78.1	75.7	76.9	78.6	79.9	81.3	82.0	82.1	82.3
1935.....	82.3	82.3	81.1	75.5	73.0	74.0	77.0	78.6	80.6	82.5	83.0	82.9
1936.....	82.3	82.6	82.5	80.0	76.6	77.0	78.5	79.1	80.6	81.8	82.4	82.3
1937.....	81.6	81.6	77.8	72.4	74.2	74.5	76.6	76.8	78.7	78.8	79.8	80.0
1938.....	80.1	79.8	79.3	76.0	73.8	74.5	76.2	77.9	79.1	79.1	80.1	80.1
1939.....	80.3	79.9	79.4	74.7	75.3	75.5	72.6	-----	-----	-----	-----	-----

POTATOES

(Whites, good to choice, bulk)

Year	Janu- ary	Febru- ary	March	April	May	June	July	Aug- ust	Sep- tem- ber	Octo- ber	Nov- em- ber	De- cem- ber	Yearly aver- age
1926.....	134.0	123.2	132.4	151.8	112.6	105.7	67.6	74.0	75.9	72.2	77.8	75.1	100.0
1927.....	76.8	77.8	62.7	86.3	119.5	122.6	70.9	66.0	64.3	58.3	58.6	55.6	75.6
1928.....	56.6	65.8	86.1	65.1	50.3	44.8	30.0	26.6	30.5	27.4	28.2	31.9	44.9
1929.....	34.5	28.8	25.8	23.4	25.3	26.3	69.5	84.0	83.4	79.7	75.3	77.0	53.3
1930.....	82.6	81.3	78.6	92.6	89.2	88.8	52.6	63.3	69.9	59.3	51.0	46.8	70.9
1931.....	48.5	46.5	47.6	49.2	41.9	52.4	45.6	39.6	31.5	25.1	26.1	27.9	40.1
1932.....	27.2	25.9	27.8	27.2	27.9	37.0	31.3	24.4	23.1	21.8	22.1	24.4	26.6
1933.....	24.5	25.0	25.9	25.3	24.5	53.9	91.3	83.8	52.1	40.5	42.3	42.7	44.2
1934.....	55.1	59.5	50.8	45.0	33.9	35.5	41.5	45.2	30.0	27.8	26.0	26.0	40.4
1935.....	27.4	25.2	22.1	27.4	21.9	33.0	45.6	33.8	30.2	28.0	36.1	38.0	31.0
1936.....	38.6	42.7	39.5	45.0	60.4	88.9	77.8	78.2	72.2	68.2	70.9	73.8	63.5
1937.....	88.8	94.6	87.3	68.5	64.3	50.0	50.4	38.7	31.7	31.9	35.1	36.3	56.2
1938.....	33.9	34.6	33.4	38.3	45.1	53.1	33.8	30.0	29.6	29.7	36.0	36.4	36.2
1939.....	41.3	41.4	40.0	39.9	41.8	51.9	41.1	-----	-----	-----	-----	-----	-----

Source: Bureau of Labor Statistics.

Wholesale prices of selected commodities—Continued

POTASH SALTS

[1926-28=100]

Month	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938
January.....	101.0	102.0	103.2	103.2	102.8	101.0	63.5	64.2	70.7	75.5
February.....	101.0	102.0	103.2	103.2	102.8	101.0	63.5	64.2	70.7	75.5
March.....	101.0	103.2	103.2	103.2	102.8	101.0	63.5	64.2	70.7	75.5
April.....	101.0	103.2	103.2	103.2	102.8	101.0	63.5	64.2	70.7	75.5
May.....	92.8	94.0	91.8	90.5	90.2	80.0	61.5	64.2	70.7	75.5
June.....	95.0	96.0	95.9	95.8	90.2	80.0	61.5	64.2	66.4	66.6
July.....	95.8	97.0	97.0	96.8	90.2	81.1	56.4	62.3	71.9	71.9
August.....	96.9	98.0	98.0	97.8	90.2	59.6	60.3	67.3	71.9	71.9
September.....	97.9	99.0	99.0	98.8	90.2	59.6	60.3	67.3	71.9	71.9
October.....	98.9	100.0	100.0	99.8	96.0	63.5	64.2	69.3	75.5	75.7
November.....	100.0	101.0	101.0	100.9	96.0	63.5	64.2	69.3	75.5	-----
December.....	102.0	103.2	103.2	102.8	96.0	63.5	64.2	70.7	75.5	-----

Source: National Fertilizer Association.

Average factory price of electric refrigerators

[1928=100]

Year—	Index	Year—	Index
1928.....	100.0	1933.....	50.1
1929.....	80.8	1934.....	50.8
1930.....	79.8	1935.....	46.9
1931.....	77.5	1936.....	48.6
1932.....	61.0	1937.....	51.2

Source: National Electrical Manufacturers Association.

Changes in average wholesale price and quantity available for consumption for 111 commodities, 1929-38

[Chart IV based on the following statistical data appears on p. 39]

Commodities	Percent change		Commodities	Percent change	
	Average price	Amount available for consumption		Average price	Amount available for consumption
Nondurable goods.			Nondurable goods—Con.		
Corn.....	•-37	•-3	Coke.....	-6	-50
Oats.....	•-29	•-27	Fuel oil.....	-27	-30
Wheat.....	•-28	•+1	Gasoline.....	-44	+3
Steers.....	-57	+28	Petroleum.....	-54	-15
Hogs.....	-61	-2	Cans, sanitary.....	-14	-2
Poultry, live.....	-55	+6	Sulfuric acid.....	0	-34
Eggs.....	-53	-1	Alcohol, denatured.....	-24	-42
Apples.....	•-32	-4	Sodium ash.....	-11	-7
Oranges.....	•-44	-62	Castor oil.....	-28	-39
Milk.....	-39	+4	Glycerine.....	-28	-7
Tobacco.....	-42	-4	Ammonia (sulfato).....	-56	+53
Beans, dried.....	•-58	-5	Superphosphate.....	-30	-37
Potatoes, white.....	•-34	-3	Tankage.....	-53	-39
Butter.....	-53	+7	Fertilizers, mixed.....	-34	-45
Cheese.....	-47	+1	Bran and middlings.....	-53	-31
Bread.....	-7	-16	Cottonseed meal.....	-55	-3
Flour, wheat.....	-17	-13	Roxboard.....	-16	-8
Rice.....	•-13	•-15	Wrapping paper (manila).....	0	-10
Beef, fresh.....	-51	+6	Soap, laundry.....	-8	-9
Pork, fresh.....	-56	+4	Cigarettes.....	-9	-1
Poultry, dressed.....	-57	+3	Cigars.....	-12	-26
Sugar:			Semidurable goods:		
Granulated.....	-15	-6	Cotton.....	•-33	•-7
Raw.....	•-13	•-6	Shoes:		
Vegetable oil, coconut.....	-51	-13	Children's.....	-21	+25
Twine, binder.....	-45	+2	Men's.....	-6	-5
Coal:			Ladies'.....	-2	0
Anthracite.....	-9	-31	Hides, steer.....	-43	-14
Bituminous.....	-9	-37			

Changes in average wholesale price and quantity available for consumption for 111 commodities, 1929-33—Continued

Commodities	Percent change		Commodities	Percent change	
	Average price	Amount available for consumption		Average price	Amount available for consumption
Semidurable goods—Con.			Durable goods—Continued.		
Skins, goat.....	-32	-19	Plows.....	0	-61
Leather:			Tractors.....	-29	-95
Calf.....	-24	-18	Castings, malleable.....	-25	-63
Kid.....	-37	-11	Pipe, black steel.....	-16	-26
Sole.....	-41	-4	Structural steel.....	-15	-76
Gloves.....	-36	-58	Tinplate and terneplate.....	-17	-3
Overcoats and topcoats.....	-2	-42	Passenger cars.....	-16	-64
Shirts, dress.....	-7	-11	Trucks.....	-23	-45
Suits, men's.....	-11	-40	Copper, ingot.....	-61	-88
Print cloth.....	-28	+2	Lead, pig.....	-43	-65
Sheeting, bleached.....	-34	+1	Tin, pig.....	-13	-28
Cotton yarn, carded.....	-23	-23	Boilers, heating.....	-27	-21
Hosiery:			Radiation.....	-38	-76
Rayon.....	-47	-41	Bathtubs.....	-26	-69
Silk.....	-47	+4	Brick:		
Union suits, women's.....	-23	+1	Common.....	-19	-82
Rayon.....	-51	+64	Fire clay.....	-7	-59
Silk, raw, Japan.....	-67	-23	Front.....	-7	-87
Silk yarn.....	-55	-75	Cement.....	-6	-63
Dress goods, woolen.....	-32	-14	Lumber:		
Overcoating.....	-18	-28	Douglas fir.....	-30	-53
Yarn, wool.....	-26	+1	Oak.....	-22	-77
Burlap.....	-36	-37	Pine.....	-20	-62
Thread, cotton.....	-22	+10	Crushed stone.....	-11	-51
Paint, outside white.....	-20	-50	Tar, pine.....	-23	-22
Varnish.....	-18	-37	Carpets.....	-28	-19
Lined oil, raw.....	-26	-49	Stoves, gas.....	-29	-54
Tires, balloon.....	-26	-41	Washing machines, electric.....	-47	+8
Rubber, plantation.....	-71	-27	Mattresses.....	-24	-50
Durable goods:			Davenport.....	-17	-67
Belting, leather.....	-18	-52	Paper, book.....	-21	-28
Harvester-thresher.....	-2	-99			

Source: Percentages computed by the Bureau of Labor Statistics, except those marked * which were furnished by the Bureau of Agricultural Economics.

Farm products—prices and production

[1926=100]

(Chart V based on the following statistical data appears on p. 41)

Year	Index of wholesale prices ¹	Index of production ²	Year	Index of wholesale prices ¹	Index of production ²
1926.....	100.0	100	1933.....	51.4	95
1927.....	99.4	97	1934.....	65.3	92
1928.....	105.9	102	1935.....	78.8	90
1929.....	104.9	99	1936.....	80.9	93
1930.....	88.3	99	1937.....	86.4	106
1931.....	64.8	105	1938.....	68.5	102
1932.....	48.2	98			

¹ Source: Bureau of Labor Statistics.

² Source: Bureau of Agricultural Economics.

Wholesale prices of 30 basic commodities, industrial production, and reciprocals of price dispersion

[1929=100]

WHOLESALE PRICE INDEXES OF 30 BASIC COMMODITIES

(Chart VI based on the following statistical data appears on p. 44)

Year	Jan- uary	Feb- ruary	March	April	May	June	July	Aug- ust	Sep- tem- ber	Octo- ber	Nov- em- ber	Dec- em- ber	Yearly aver- age
1926.....	117.0	112.6	108.4	105.2	104.6	107.3	108.1	106.9	107.9	104.7	102.4	102.7	107.6
1927.....	103.2	104.1	103.7	103.3	102.9	103.2	103.7	105.9	107.3	107.0	106.7	107.7	105.4
1928.....	103.5	105.6	105.4	106.3	107.5	105.7	105.9	103.9	104.0	102.8	101.9	102.0	105.4
1929.....	101.9	103.4	104.1	101.9	98.4	98.2	101.4	101.9	102.3	99.6	94.3	91.3	100.0
1930.....	89.1	88.2	85.7	84.7	80.8	76.4	73.4	72.7	71.2	68.8	66.5	64.6	77.0
1931.....	61.9	60.0	61.1	59.1	55.9	55.2	55.3	52.6	50.3	49.1	50.1	47.1	55.0
1932.....	46.3	45.1	43.9	41.4	39.0	37.6	38.6	42.8	45.2	42.0	40.3	38.0	41.9
1933.....	37.2	36.4	38.4	41.3	51.0	55.9	61.7	58.7	58.0	55.3	55.8	54.6	50.7
1934.....	57.4	61.1	61.0	60.6	60.9	61.7	62.4	65.9	67.9	66.5	67.6	68.9	63.9
1935.....	71.8	72.0	70.0	70.4	70.8	69.9	69.2	70.7	72.7	74.8	74.1	73.1	71.9
1936.....	72.0	71.6	70.8	70.3	67.8	68.7	73.2	76.7	77.8	77.8	81.4	86.4	74.8
1937.....	89.9	89.2	92.6	90.4	87.0	84.6	86.8	85.0	83.4	76.7	70.5	68.1	84.2
1938.....	68.6	67.1	65.9	63.3	61.7	60.9	64.3	63.3	63.2	63.8	63.8	63.1	64.3
1939.....	63.1	62.9	63.3	61.7	62.5	62.0	60.3	59.5	-----	-----	-----	-----	-----

Source: Bureau of Labor Statistics.

INDEXES OF INDUSTRIAL PRODUCTION, ADJUSTED

Year	Jan- uary	Feb- ruary	March	April	May	June	July	Aug- ust	Sep- tem- ber	Octo- ber	Nov- em- ber	Dec- em- ber
1926.....	89	88	89	90	89	91	91	92	93	93	92	90
1927.....	90	91	92	91	92	90	89	89	87	86	85	86
1928.....	90	92	91	91	91	91	92	92	95	97	98	99
1929.....	100	99	99	102	103	105	104	102	102	99	92	87
1930.....	89	90	87	87	86	82	78	76	76	74	72	71
1931.....	70	72	73	74	73	70	69	66	64	61	61	62
1932.....	61	58	56	53	50	50	49	50	56	56	55	56
1933.....	55	53	50	56	66	77	84	77	71	64	61	63
1934.....	66	68	71	72	72	71	64	61	60	62	63	72
1935.....	77	75	74	72	71	72	72	73	76	80	82	87
1936.....	82	79	78	85	85	87	91	91	92	92	96	102
1937.....	96	98	99	99	99	96	96	98	93	87	75	71
1938.....	68	66	66	65	64	65	70	74	77	81	87	87
1939.....	85	82	82	77	77	82	85	86	-----	-----	-----	-----

Source: Federal Reserve Board.

RECIPROCAL OF INDEXES OF WHOLESALE PRICE DISPERSION

Year	Jan- uary	Feb- ruary	March	April	May	June	July	Aug- ust	Sep- tem- ber	Octo- ber	Nov- em- ber	Dec- em- ber
1928.....	116.1	125.8	126.9	114.8	106.6	112.6	99.9	94.5	88.0	105.5	113.0	109.8
1929.....	103.1	105.9	92.0	91.8	94.8	97.8	90.3	89.3	92.9	99.2	105.3	102.7
1930.....	100.9	99.2	93.6	93.0	92.8	90.1	89.0	91.6	83.4	81.0	74.5	72.9
1931.....	70.0	66.4	64.3	62.3	57.1	53.2	53.2	53.0	49.7	48.5	48.1	43.7
1932.....	41.4	39.3	39.7	39.4	36.7	36.0	39.7	40.9	42.2	39.6	39.4	35.5
1933.....	34.4	32.8	34.1	35.3	41.1	45.1	47.9	44.2	45.1	43.1	42.9	40.6
1934.....	42.7	45.7	46.4	44.8	45.2	49.7	51.7	57.9	64.9	59.3	59.7	60.1
1935.....	75.8	76.1	69.2	71.5	71.1	73.3	72.3	66.3	64.7	67.4	75.4	70.4
1936.....	71.5	75.1	72.2	75.4	79.2	87.2	93.7	88.2	88.5	94.6	98.6	97.3
1937.....	92.3	93.4	82.0	72.5	69.8	68.6	62.1	58.6	58.7	60.1	63.6	64.4
1938.....	63.9	60.2	59.0	56.2	54.8	54.1	54.7	54.9	56.0	57.1	59.2	59.2
1939.....	55.8	54.3	53.3	51.8	53.3	54.1	54.4	51.8	-----	-----	-----	-----

Source: Works Progress Administration.

The measure of dispersion is the weighted average of the deviations of the 45 commodity subgroup price indexes from the all-commodities index. The indexes were derived by dividing the monthly average deviations by the average deviation in 1929. The reciprocals were obtained by dividing each monthly dispersion index into 100.

Indexes of Wholesale Price Dispersion and Industrial Production

[1926=100]

(Chart VII based on the following statistical data appears on p. 46)

INDEXES OF WHOLESALE PRICE DISPERSION

Year	January	February	March	April	May	June	July	August	September	October	November	December
1928.....	86.1	79.5	78.8	87.1	93.8	88.8	100.1	105.8	113.7	94.8	88.5	91.1
1929.....	97.0	94.4	108.7	108.9	105.5	102.2	110.7	112.0	107.6	100.8	95.0	97.4
1930.....	99.1	100.8	106.8	107.5	107.8	111.0	112.4	109.2	119.9	123.4	134.2	137.2
1931.....	142.8	150.7	155.6	160.5	175.1	188.1	187.8	188.6	201.4	206.3	208.0	228.6
1932.....	241.6	254.7	252.2	253.8	272.5	277.4	252.1	244.4	237.1	252.3	253.8	281.6
1933.....	290.5	305.0	293.3	283.2	243.2	221.7	208.8	226.4	221.7	231.8	233.2	246.4
1934.....	234.4	219.0	215.3	223.3	221.4	201.4	193.4	172.7	154.1	168.5	167.4	166.3
1935.....	132.0	131.4	144.5	139.9	140.6	136.5	138.3	150.9	154.5	148.3	132.7	142.0
1936.....	139.8	133.2	138.5	132.6	126.3	114.7	106.7	113.4	113.0	105.7	101.4	102.8
1937.....	108.3	107.1	121.9	137.9	143.2	145.7	161.0	170.6	170.3	166.3	157.2	155.4
1938.....	156.6	166.1	169.5	178.0	182.4	185.0	182.8	182.2	178.7	175.2	168.8	168.8
1939.....	179.1	184.3	187.5	193.0	187.6	184.8	183.8	193.2	153.5	171.1	-----	-----

Source: Works Progress Administration.

INDEXES OF INDUSTRIAL PRODUCTION, ADJUSTED

Year	January	February	March	April	May	June	July	August	September	October	November	December
1926.....	89	88	89	90	89	91	91	92	93	93	92	90
1927.....	90	91	92	91	92	90	89	89	87	86	85	86
1928.....	90	92	91	91	91	91	92	92	95	97	98	99
1929.....	100	99	99	102	103	105	104	102	102	99	92	87
1930.....	89	90	87	87	86	82	78	76	76	74	72	71
1931.....	70	72	73	74	73	70	69	66	64	61	61	62
1932.....	61	58	56	53	50	50	49	50	56	56	55	56
1933.....	55	53	50	56	66	77	84	77	71	64	61	63
1934.....	66	68	71	72	72	71	64	61	60	62	63	72
1935.....	77	75	74	72	71	72	72	73	76	80	82	87
1936.....	82	79	78	85	85	87	91	91	92	92	96	102
1937.....	96	98	99	99	99	96	96	98	93	87	75	71
1938.....	68	66	66	65	64	65	70	74	77	81	87	87
1939.....	85	82	82	77	77	82	85	86	93	101	-----	-----

Source: Federal Reserve Board.

Automobile tires—wholesale price and average life of automobile tires

(Chart VIII based on the following statistical data appears on p. 65)

Year	Price index ¹ (1926=100)	Tire life ² (years)	Year	Price index ¹ (1926=100)	Tire life ² (years)
1913.....	207.2	0.805	1926.....	100.0	1.770
1914.....	173.1	.722	1927.....	74.9	1.655
1915.....	155.1	.768	1928.....	63.4	1.550
1916.....	160.4	.762	1929.....	54.5	1.848
1917.....	198.0	.712	1930.....	51.3	2.465
1918.....	229.2	.893	1931.....	46.0	2.417
1919.....	269.2	.933	1932.....	41.1	2.689
1920.....	232.5	1.281	1933.....	42.1	2.427
1921.....	179.0	1.486	1934.....	44.9	2.566
1922.....	115.4	1.296	1935.....	45.7	2.725
1923.....	109.5	1.508	1936.....	47.2	2.695
1924.....	92.6	1.670	1937.....	55.8	2.908
1925.....	98.6	1.551	1938.....	57.7	-----

¹ Source: Bureau of Labor Statistics.² Source: Bureau of Foreign and Domestic Commerce, Rubber News Letter.³ Preliminary.

Retail prices of men's dress shirts

(Chart IX based on the following statistical data appears on p. 84)

Date	One nationally advertised brand	Other brands ¹	Date	One nationally advertised brand	Other brands ¹
December 1929.....	\$1.95	\$1.91	November 1934.....	\$1.95	\$1.73
December 1932.....	1.95	1.55	December 1936.....	2.00	1.59
December 1933.....	1.95	1.76	December 1937.....	2.00	1.61

¹ Unweighted average.

Source: Bureau of Labor Statistics.

Breakfast cereals—prices and margins

(Chart X based on the following statistical data appears on p. 85)

[Cents per pound]

Year	Rolled oats			Corn flakes		
	Farm value ¹	Wholesale price ²	Retail price ²	Farm value ¹	Wholesale price ²	Retail price ²
1926.....	2.2	6.6	9.1	2.8	13.4	21.0
1927.....	2.5	6.7	9.0	3.6	13.4	19.8
1928.....	2.7	6.6	9.0	4.0	13.4	18.8
1929.....	2.5	6.6	8.8	4.0	13.4	18.6
1930.....	2.1	6.6	8.6	3.6	13.4	18.4
1931.....	1.4	6.0	8.0	2.2	13.4	17.6
1932.....	1.0	5.4	7.4	1.3	13.4	16.8
1933.....	1.4	4.0	5.8	1.7	13.4	16.8
1934.....	2.3	5.3	6.8	2.8	13.0	16.8
1935.....	2.2	5.8	7.5	3.6	12.5	16.6
1936.....	1.9	5.6	7.4	3.6	12.1	16.2
1937.....	2.3	5.7	7.5	4.4	12.6	15.8

¹ Source: Bureau of Agricultural Economics.² Source: Bureau of Labor Statistics.*Wholesale prices of selected foods (products classified into 4 quartiles according to consumer buying habits) ¹*

[1929=100]

(Chart XI based on the following statistical data appears on p. 87)

FIRST QUARTILE

Month	Years													
	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939
January.....	103.8	92.8	101.0	98.0	96.1	74.4	61.7	49.0	67.0	79.2	78.6	80.2	72.1	68.4
February.....	102.7	91.0	102.5	97.9	95.9	70.8	59.8	48.2	68.3	79.4	76.9	80.2	71.6	67.5
March.....	101.6	90.0	103.5	98.9	94.5	71.6	58.6	49.9	69.5	79.6	75.6	81.1	71.6	67.5
April.....	101.0	90.5	104.2	100.1	93.7	70.2	57.2	51.7	69.9	81.1	76.5	83.8	71.4	67.6
May.....	102.1	92.6	105.0	100.8	90.7	69.5	55.7	56.1	71.1	81.4	75.2	84.4	70.8	68.2
June.....	99.9	92.8	102.0	99.1	89.4	67.5	55.1	52.7	71.4	81.0	74.4	83.8	70.5	66.8
July.....	99.6	93.0	102.1	102.1	85.0	67.0	55.1	56.4	72.6	79.8	76.8	84.1	70.9	65.8
August.....	97.8	92.5	100.6	103.0	83.8	66.2	55.0	55.9	76.1	80.4	81.1	82.5	68.8	-----
September.....	96.2	94.5	102.9	102.8	81.8	65.4	55.2	63.7	79.0	81.2	82.0	81.4	69.1	-----
October.....	94.8	94.4	100.9	100.6	78.9	63.1	55.4	65.0	78.4	82.0	79.9	77.9	68.2	-----
November.....	93.5	97.7	98.3	98.7	75.8	64.0	51.3	66.8	78.1	80.1	78.8	72.3	68.1	-----
December.....	92.9	99.3	96.6	97.7	74.6	62.4	49.3	66.7	78.4	80.1	78.9	72.0	68.2	-----
Yearly average.....	98.8	96.2	101.7	100.0	86.6	67.6	55.6	58.7	73.3	80.4	77.9	80.2	70.1	-----

¹ For first quartile, brand names were least significant to consumer, and progressively more significant in each succeeding quartile.

Data based upon sample study of consumer buying habits designed to determine relative weight given to brand names by consumers in purchasing different commodities. The products covered were ranked according to the importance of brand names in their respective markets, and then grouped into quartiles on the basis of these ranks. Unweighted averages of the Bureau of Labor Statistics wholesale prices for each quartile were then computed.

Wholesale prices of selected foods (products classified into 4 quartiles according to consumer buying habits)—Continued

[1929=100]

SECOND QUARTILE

Month	Years													
	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939
January.....	98.6	93.0	104.0	99.5	96.0	78.0	62.3	57.0	68.1	85.6	77.2	89.5	74.4	66.5
February.....	96.9	94.7	105.0	99.1	95.4	76.3	61.6	56.3	70.3	88.2	76.4	89.5	72.3	65.8
March.....	94.4	94.5	105.0	100.1	94.1	76.6	60.8	57.4	72.9	88.3	75.6	90.5	71.4	65.5
April.....	94.7	95.3	105.2	99.4	92.4	75.6	59.6	59.2	72.3	87.8	75.6	91.6	70.0	65.2
May.....	94.5	98.6	106.7	98.6	89.0	74.1	59.0	63.2	73.6	86.6	73.6	91.1	69.3	67.5
June.....	96.0	99.7	106.8	99.1	86.6	73.1	58.5	64.7	74.6	85.9	73.2	90.7	67.6	67.4
July.....	96.0	101.0	104.7	101.0	85.2	72.7	59.0	68.5	75.0	84.1	77.1	88.7	67.5	66.3
August.....	95.5	101.2	101.1	101.6	87.6	71.9	59.5	68.1	77.4	83.3	84.7	86.8	66.8	-----
September.....	94.6	98.6	102.8	102.5	87.1	70.8	60.3	68.9	80.1	83.6	86.5	84.3	66.7	-----
October.....	95.5	100.4	104.1	100.6	86.6	68.7	59.7	68.3	81.1	83.5	83.7	81.4	66.7	-----
November.....	93.4	100.2	103.1	99.3	83.1	66.8	59.1	69.0	82.1	81.8	83.5	77.9	65.9	-----
December.....	92.8	101.0	101.9	98.9	80.9	64.0	57.8	67.8	83.3	80.2	86.1	76.1	67.5	-----
Yearly average.....	95.2	98.2	104.2	100.0	88.7	72.3	59.8	64.1	75.8	84.9	79.5	86.5	68.9	-----

THIRD QUARTILE

January.....	104.0	103.5	99.9	98.3	101.3	86.9	76.7	68.9	77.2	87.0	81.5	85.3	83.7	77.8
February.....	103.6	103.8	99.0	98.8	101.5	87.2	76.3	68.2	78.2	87.3	81.4	86.3	83.8	77.6
March.....	103.3	103.3	98.6	95.9	100.2	85.3	76.7	68.1	80.0	87.6	81.4	86.7	83.5	77.4
April.....	103.4	103.2	98.6	97.3	98.6	84.5	76.6	68.6	80.7	86.9	82.0	86.9	83.1	77.5
May.....	103.1	103.3	99.7	99.5	93.5	82.9	76.1	70.5	80.3	86.3	81.0	87.0	82.4	77.5
June.....	104.0	102.9	99.6	100.5	93.6	81.3	75.2	72.1	81.1	86.2	81.2	87.8	81.4	77.5
July.....	104.4	102.0	99.4	102.3	90.8	81.1	73.6	75.5	82.7	85.7	82.8	86.8	80.9	77.0
August.....	103.5	101.2	97.5	101.5	90.5	80.0	71.5	78.2	82.8	83.0	85.7	85.9	80.2	-----
September.....	103.8	101.6	97.7	101.5	91.1	79.4	69.6	80.6	85.4	83.2	86.3	86.4	79.2	-----
October.....	104.5	101.0	99.7	101.9	90.4	79.3	69.9	79.6	87.1	82.9	85.3	86.1	78.2	-----
November.....	103.8	101.1	98.3	100.9	88.6	78.1	69.5	77.9	87.1	82.8	85.0	85.6	77.4	-----
December.....	103.8	101.2	98.3	100.3	86.3	77.8	69.1	76.9	86.7	82.9	85.3	84.4	77.5	-----
Yearly average.....	103.8	102.3	98.9	100.0	93.9	82.0	73.4	73.7	82.4	85.1	83.3	86.3	80.9	-----

FOURTH QUARTILE

January.....	103.2	101.7	104.0	100.1	96.7	87.0	76.8	67.0	75.6	85.1	86.0	88.0	84.7	77.1
February.....	102.5	102.2	102.7	101.8	96.8	87.0	76.2	65.1	76.7	87.1	85.7	87.0	84.4	76.8
March.....	101.9	101.9	102.7	101.3	96.7	86.0	75.4	65.2	76.9	86.8	84.9	86.8	83.3	77.9
April.....	101.7	101.9	103.5	100.4	96.4	84.4	74.2	67.0	77.1	87.5	83.8	86.9	81.8	78.1
May.....	101.6	101.7	104.3	100.1	95.5	83.5	72.3	69.1	78.6	86.4	82.3	86.7	79.6	78.0
June.....	102.6	101.7	104.4	100.2	93.6	83.2	70.8	70.1	80.2	84.9	81.9	87.0	79.5	78.0
July.....	102.8	101.1	103.8	100.9	93.0	82.8	70.6	73.9	80.2	85.4	83.6	87.6	79.2	78.1
August.....	101.1	100.6	101.3	100.7	93.0	82.6	70.7	74.6	81.6	86.3	85.9	85.8	77.8	-----
September.....	101.5	100.2	100.8	100.5	91.1	81.4	70.0	75.1	83.4	86.8	85.5	85.8	77.3	-----
October.....	102.5	101.5	100.1	99.0	90.9	80.9	69.5	75.6	83.7	86.0	84.6	85.7	77.2	-----
November.....	102.5	102.8	100.0	97.7	88.8	80.5	69.4	76.1	83.8	86.1	84.7	85.0	76.7	-----
December.....	102.9	102.8	99.7	97.7	87.8	80.1	69.4	75.2	84.2	86.8	86.3	84.7	77.2	-----
Yearly average.....	102.2	101.6	102.3	100.0	93.3	83.3	72.1	71.2	80.0	86.2	84.6	86.4	79.9	-----

Source: Bureau of Labor Statistics.

Electric refrigerators—number sold, retail value, average realization at retail, and wholesale price index

(Chart XII based on the following statistical data appears on p. 113)

Year	Number sold ¹	Total retail value ¹	Unit retail value ¹	Wholesale price index (1932=100) ²
1927.....	375,000	\$131,250,000	\$350	-----
1928.....	535,000	178,690,000	334	-----
1929.....	778,000	227,176,000	292	-----
1930.....	791,000	217,525,000	275	-----
1931.....	906,000	233,748,000	258	-----
1932.....	798,000	155,610,000	195	100.0
1933.....	1,016,000	172,720,000	170	86.7
1934.....	1,283,000	220,676,000	172	90.9
1935.....	1,568,000	253,648,000	162	89.2
1936.....	1,996,000	327,344,000	164	80.6
1937.....	2,310,000	395,010,000	171	93.9
1938.....	1,240,000	213,280,000	172	96.3

¹ Source: Electrical Merchandising.² Source: Bureau of Labor Statistics.*Electric washing machines—number sold, retail value, average realization at retail, and wholesale price index*

(Chart XIII based on the following statistical data appears on p. 114)

Year	Number sold ¹	Total retail value ¹	Unit retail value ¹	Wholesale price index (1932=100) ²
1927.....	775,661	\$110,925,000	\$143.01	211.0
1928.....	809,884	108,000,000	133.35	172.8
1929.....	956,000	107,900,000	112.87	153.8
1930.....	802,000	83,809,000	104.50	138.2
1931.....	812,000	69,020,000	85.00	121.1
1932.....	569,830	33,619,970	59.00	100.0
1933.....	966,698	59,935,276	62.00	82.3
1934.....	1,121,137	72,873,905	65.00	80.6
1935.....	1,228,774	79,931,748	65.05	80.6
1936.....	1,528,585	100,947,753	66.04	86.7
1937.....	1,465,405	105,860,857	72.24	86.7
1938.....	1,032,956	74,279,866	71.91	86.7

¹ Source: Electrical Merchandising.² Source: Bureau of Labor Statistics.*Vacuum cleaners—number sold, retail value, average realization at retail, and wholesale price index*

(Chart XIV based on the following statistical data appears on p. 115)

Year	Number sold ¹	Total retail value ¹	Unit retail value ¹	Wholesale price index (1932=100) ²
1927.....	1,194,614	\$58,536,086	\$49.00	129.1
1928.....	1,219,460	60,973,000	50.00	129.1
1929.....	1,395,745	61,810,970	46.43	125.1
1930.....	1,170,339	55,987,704	47.84	121.2
1931.....	877,695	37,310,822	42.51	112.0
1932.....	557,288	19,600,756	35.17	100.0
1933.....	739,354	30,271,330	40.94	95.9
1934.....	968,376	43,555,465	44.98	102.5
1935.....	1,200,940	54,769,769	45.56	93.0
1936.....	1,510,953	67,456,541	44.65	86.1
1937.....	1,706,337	77,783,784	45.59	86.1
1938.....	1,297,530	63,986,896	49.31	86.1

¹ Source: Electrical Merchandising.² Source: Bureau of Labor Statistics.

Electric ranges—number sold, retail value, average realization at retail, and wholesale price index

(Chart XV based on the following statistical data appears on p. 116)

Year	Number sold ¹	Total retail value ¹	Unit retail value ¹	Wholesale price index (1932=100) ²
1927.....	102,000	6,539,566	\$162.15	132.4
1928.....	135,000	22,175,000	164.26	134.2
1929.....	152,781	25,270,000	165.40	126.9
1930.....	180,000	27,000,000	150.00	97.0
1931.....	115,000	18,795,000	163.43	97.0
1932.....	60,000	9,000,000	150.00	100.0
1933.....	50,000	7,100,000	142.00	93.6
1934.....	123,000	15,990,000	130.00	99.4
1935.....	215,000	27,305,000	127.00	88.0
1936.....	318,000	41,413,140	130.23	89.2
1937.....	405,000	54,270,000	134.00	97.2
1938.....	275,000	39,875,000	145.00	98.1

¹ Source: Electrical Merchandising.

² Source: Bureau of Labor Statistics.

Sales and saturation ¹

(Chart XVI based on the following statistical data appears on p. 119)

Year	Electric refrigerators		Power washing machines		Vacuum cleaners		Electric ranges	
	Number sold	Percent of homes using	Number sold	Percent of homes using	Number sold	Percent of homes using	Number sold	Percent of homes using
1927.....	375,000	4.3	775,661	28.4	1,194,614	38.8	102,000	3.3
1928.....	535,000	6.4	809,884	30.2	1,219,460	40.7	135,000	3.8
1929.....	778,000	9.4	956,000	33.4	1,395,745	43.6	152,781	4.4
1930.....	791,000	12.8	802,000	35.1	1,170,339	44.4	180,000	4.8
1931.....	906,000	17.1	812,000	40.8	877,695	45.4	115,000	5.3
1932.....	798,000	21.6	569,830	39.4	557,288	46.6	60,000	5.5
1933.....	1,016,000	24.6	966,698	43.9	739,354	48.5	50,000	5.8
1934.....	1,283,000	29.3	1,121,137	46.0	968,376	48.1	123,000	6.1
1935.....	1,568,000	34.2	1,228,774	48.8	1,200,940	48.3	215,000	6.8
1936.....	1,996,000	41.1	1,528,585	52.5	1,510,953	48.9	318,000	7.9
1937.....	2,310,000	49.4	1,465,405	55.5	1,706,337	48.8	405,000	9.0
1938.....	1,240,000	51.7	1,032,956	57.6	1,297,530	49.0	275,000	9.6

¹ Percent of wired homes.

Source: Electrical Merchandising.

Household equipment ownership by income groups, 1935-36—Percentage of families reporting ownership, selected cities by regions

(Charts XVII to XX based on the following statistical data appear on pp. 122-129)

ELECTRIC REFRIGERATORS

Income class	New England				East Central				West Central		South-east		Rocky Mountain		Pacific North-west	
	Metropolis	Large cities	Middle sized cities	Small cities	Metropolis	Large cities	Middle sized cities	Small cities	Large cities	Middle sized cities	Large cities	Middle sized cities	Large cities	Middle sized cities	Large cities	Middle sized cities
\$250 and under \$500	---	---	12	---	---	---	10	8	---	10	---	6	---	12	---	---
\$500 and under \$750	13	2	9	12	6	---	12	12	7	4	8	11	11	9	18	---
\$750 and under \$1,000	7	11	9	14	9	6	20	12	15	11	16	25	9	11	9	---
\$1,000 and under \$1,250	15	13	21	17	15	23	28	27	27	22	28	33	6	23	21	8
\$1,250 and under \$1,500	14	14	27	20	17	28	36	36	35	37	43	40	16	31	28	15
\$1,500 and under \$1,750	15	26	30	35	28	39	43	42	48	46	55	64	23	30	32	19
\$1,750 and under \$2,000	18	28	43	37	27	44	56	51	54	56	57	64	30	42	48	25
\$2,000 and under \$2,250	18	32	42	47	32	48	59	60	56	63	66	61	34	56	51	33
\$2,250 and under \$2,500	19	44	56	56	34	55	71	63	57	66	61	71	47	58	56	44
\$2,500 and under \$3,000	32	50	61	72	37	60	81	66	67	76	70	66	57	67	64	49
\$3,000 and under \$3,500	25	63	69	63	40	70	81	75	73	72	65	87	51	76	77	62
\$3,500 and under \$4,000	24	63	86	---	42	60	90	---	78	88	72	84	66	77	68	54
\$4,000 and under \$5,000	19	61	82	---	37	75	89	---	89	90	78	78	75	88	65	58
\$5,000 and under \$7,500	29	75	100	---	42	84	85	---	82	99	68	84	70	77	85	71
\$7,500 and under \$10,000	28	---	---	---	30	---	---	---	88	---	---	---	82	---	---	---
\$7,500 and over	---	66	---	---	---	---	---	---	---	---	95	---	---	---	92	---
\$10,000 and over	11	---	---	---	50	---	---	---	---	---	---	---	---	---	---	---

POWER WASHING MACHINES

\$250 and under \$500	---	---	24	---	---	19	56	---	46	---	---	---	27	---	---	53
\$500 and under \$750	13	---	18	34	22	57	62	63	66	44	---	2	25	55	31	53
\$750 and under \$1,000	3	6	25	54	25	59	72	77	55	66	5	5	31	45	45	66
\$1,000 and under \$1,250	7	7	42	38	40	68	77	74	70	69	9	4	45	56	54	80
\$1,250 and under \$1,500	6	10	43	54	46	77	79	88	70	73	12	10	51	62	61	71
\$1,500 and under \$1,750	2	14	46	63	44	76	81	84	73	70	9	6	48	57	61	69
\$1,750 and under \$2,000	4	19	45	65	54	81	83	84	76	75	12	9	48	68	69	80
\$2,000 and under \$2,250	5	18	45	51	55	80	82	80	68	70	17	6	51	65	67	73
\$2,250 and under \$2,500	9	21	53	59	48	82	75	77	70	73	10	10	52	67	70	77
\$2,500 and under \$3,000	14	22	43	63	52	77	75	86	71	66	16	11	52	51	70	72
\$3,000 and under \$3,500	8	37	54	64	56	83	68	78	76	67	12	14	57	48	76	73
\$3,500 and under \$4,000	13	34	56	---	52	79	78	---	81	56	17	7	43	68	69	77
\$4,000 and under \$5,000	11	32	51	---	53	84	67	---	74	66	6	7	61	68	75	87
\$5,000 and under \$7,500	10	32	59	---	48	82	80	---	82	50	22	13	53	79	79	83
\$7,500 and under \$10,000	14	---	---	---	41	86	---	---	85	---	---	---	39	---	---	---
\$7,500 and over	---	47	---	---	---	---	---	---	---	---	29	---	---	---	82	---
\$10,000 and over	16	---	---	---	63	---	---	---	---	---	---	---	---	---	---	---

VACUUM CLEANERS

\$250 and under \$500	---	---	12	20	---	---	28	40	---	18	---	3	---	---	---	---
\$500 and under \$750	50	18	25	40	30	44	41	30	29	31	---	2	36	8	43	37
\$750 and under \$1,000	35	18	27	25	46	48	45	41	39	19	8	3	34	25	33	22
\$1,000 and under \$1,250	25	28	37	42	48	63	67	52	44	42	14	5	38	42	38	43
\$1,250 and under \$1,500	43	43	44	44	69	72	61	62	67	54	13	8	58	37	59	40
\$1,500 and under \$1,750	47	53	59	63	72	74	74	81	73	58	26	19	65	50	65	52
\$1,750 and under \$2,000	60	68	64	75	77	87	82	79	80	71	35	13	71	63	68	72
\$2,000 and under \$2,250	63	76	66	74	81	88	87	92	76	74	44	26	75	68	78	68
\$2,250 and under \$2,500	68	90	78	75	82	89	92	85	88	84	49	32	81	77	72	78
\$2,500 and under \$3,000	77	84	86	84	86	92	92	94	83	89	48	42	81	87	81	69
\$3,000 and under \$3,500	78	92	84	88	89	96	98	98	91	90	61	61	84	89	97	92
\$3,500 and under \$4,000	84	95	74	---	94	89	100	---	95	88	66	60	90	95	89	90
\$4,000 and under \$5,000	88	89	100	---	92	97	94	---	97	93	67	54	90	88	93	95
\$5,000 and under \$7,500	84	93	100	---	92	97	98	---	92	91	82	76	94	94	93	96
\$7,500 and under \$10,000	100	---	---	---	95	97	---	---	100	---	---	95	---	---	---	---
\$7,500 and over	---	100	---	---	---	---	---	---	---	---	88	---	---	---	100	---
\$10,000 and over	100	---	---	---	86	---	---	---	---	---	---	---	---	---	---	---

Household equipment ownership by income groups, 1935-36—Percentage of families reporting ownership, selected cities by regions—Continued

RADIOS

Income class	New England				East Central				West Central		South-east		Rocky Mountain		Pacific North-west	
	Metropolis	Large cities	Middle sized cities	Small cities	Metropolis	Large cities	Middle sized cities	Small cities	Large cities	Middle sized cities	Large cities	Middle sized cities	Large cities	Middle sized cities	Large cities	Middle sized cities
\$250 and under \$500.....	...	...	75	50	...	...	74	95	...	84	...	30	...	47	...	100
\$500 and under \$750.....	94	88	90	85	98	89	91	67	89	81	51	49	89	85	82	85
\$750 and under \$1,000.....	94	97	93	83	97	88	93	94	92	88	78	70	88	87	99	90
\$1,000 and under \$1,250.....	92	95	95	95	93	87	96	95	93	92	86	85	87	94	93	92
\$1,250 and under \$1,500.....	96	94	97	94	96	93	97	94	97	92	93	90	93	86	98	97
\$1,500 and under \$1,750.....	99	98	95	97	95	94	96	96	99	98	92	94	96	94	91	98
\$1,750 and under \$2,000.....	97	99	97	94	99	95	98	96	100	96	96	94	98	90	96	99
\$2,000 and under \$2,250.....	100	99	99	94	99	98	100	98	96	97	95	97	99	95	95	96
\$2,250 and under \$2,500.....	99	100	98	99	98	97	98	99	93	97	95	94	95	98	95	98
\$2,500 and under \$3,000.....	99	99	98	98	98	98	100	99	98	95	95	96	96	100	98	98
\$3,000 and under \$3,500.....	98	100	100	99	98	98	99	99	98	98	99	97	99	100	97	100
\$3,500 and under \$4,000.....	100	100	100	...	99	94	100	...	96	100	97	100	100	95	98	100
\$4,000 and under \$5,000.....	99	100	100	...	100	99	98	...	99	97	100	99	100	100	94	100
\$5,000 and under \$7,500.....	97	100	100	...	99	99	100	...	100	100	97	100	100	95	87	100
\$7,500 and under \$10,000.....	97	...	...	...	99	100	...	...	100	...	97	...	100	...	...	...
\$7,500 and over.....	...	100	...	...	...	...	...	...	...	...	...	...	...	...	99	...
\$10,000 and over.....	100	...	...	...	99	...	...	...	...	...	...	...	...	...	...	...

Source: Bureau of Labor Statistics: Study of Consumer Purchases, Urban Series, 1935-36.

NOTE.—These data are compiled from a study of urban consumer purchases conducted during 1935-36 by the Bureau of Labor Statistics. The study relates to nonrelief families including husband and wife, both native-born, in 31 selected cities throughout the country. The data include only equipment owned at the end of the schedule year, and all figures based upon number of families in the three-way control (occupation, income, family type) represent weighted data.

Income residual after primary expenditures¹ by income groups, 1935-36—Nonrelief white families, including husband and wife, both native born²

(Chart XXI based on the following statistical data appears on p. 132-3)

Family income class	New England				East Central				West Central		South-east		Rocky Mountain		Pacific North-west	
	Metropolis	Large cities	Middle sized cities	Small cities	Metropolis	Large cities	Middle sized cities	Small cities	Large cities	Middle sized cities	Large cities	Middle sized cities	Large cities	Middle sized cities	Large cities	Middle sized cities
\$250 and under \$500			-69	-28			-28	-23		-32		-15		-39		-20
\$500 and under \$750	-43	-5	-6	-11	-16	1	-2	3	(3)	2	8	5	-4	-6	-2	3
\$750 and under \$1,000	-8	9	6	10	2	10	9	14	12	12	9	16	12	5	11	20
\$1,000 and under \$1,250	-7	13	13	14	10	16	16	16	14	19	15	18	19	15	21	21
\$1,250 and under \$1,500	10	17	16	22	15	21	20	25	19	22	21	21	23	19	24	28
\$1,500 and under \$1,750	15	19	21	20	19	25	25	26	23	27	23	22	25	28	30	29
\$1,750 and under \$2,000	17	24	22	27	23	28	29	30	26	30	24	26	28	24	31	30
\$2,000 and under \$2,250	18	23	29	29	26	30	31	30	30	34	29	28	29	32	33	32
\$2,250 and under \$2,500	22	29	29	30	25	32	35	34	34	36	30	33	34	33	35	36
\$2,500 and under \$3,000	24	30	34	33	29	37	37	37	35	37	33	32	36	31	35	39
\$3,000 and under \$3,500	26	31	33	41	35	37	39	49	36	41	35	38	37	37	41	39
\$3,500 and under \$4,000	29	40	42		35	42	43		41	47	36	41	40	41	43	42
\$4,000 and under \$5,000	28	38	46		38	44	46		42	46	41	42	43	42	46	49
\$5,000 and under \$7,500	32	42	45		45	45	57		43	58	45	52	46	57	51	51
\$7,500 and under \$10,000	36	46			46	52			55		59		53		61	
\$10,000 and over	51				61	68										

¹ Figures show percent of income remaining after expenditures for food, home maintenance, clothing and personal care are made.

² Family types covered are as follows:

Family type I—2 persons (husband and wife only).

Family type II—3 persons (husband, wife, 1 child under 16, and no others).

Family type III—4 persons (husband, wife, 2 children under 16, and no others).

Family type IV—3 or 4 persons (husband, wife, 1 person 16 or over, and 1 or no other person regardless of age).

Family type V—5 or 6 persons (husband, wife, 1 child under 16, 1 person 16 or over, and 1 or 2 other persons regardless of age).

Family type VI—5 or 6 persons (husband, wife, 3 or 4 children under 16 and no others).

Family type VII—7 or 8 persons (husband, wife, 1 child under 16, 4 or 5 other persons regardless of age).

Family types VI and VII appear in east central region only.

³ Less than 1 percent.

Source: Bureau of Labor Statistics; Study of Consumer Purchases, Urban Series, 1935-36.

PART II

GEOGRAPHIC PRICE STRUCTURES

BY
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ASSISTED BY
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PART II

PREFACE

In part I of this volume, it was pointed out that the behavior and structure of prices is influenced in varying degrees by the policy decisions of businessmen, acting individually or in concert. Such policy decisions, within the scope of their effectiveness, must take into account not only a nominal price quotation but also a host of collateral terms and conditions of sale. One of the most important of these concerns the expense and responsibility of shipping the merchandise from the place of business of the seller to that of the buyer. A quotation which implies that the purchaser must arrange and pay for transportation is clearly different from one which includes delivery to destination.

It is axiomatic that there are two points of view in every transaction. The seller is concerned with his net return which excludes freight; the buyer with his total outlay after freight has been paid. In choosing between the offers of two rival manufacturers producing identical commodities, if transportation costs are of any significance in the unit cost of a product, the buyer will naturally compare delivered costs and not net price at the plant; the latter is not his immediate problem. If the merchandise is not identical, it is nevertheless the difference in delivered costs which he must weigh against any inequalities of product.

This situation is inevitably reflected in commodity price structures. Sellers, acting within the field in which they can formulate and maintain policy, have adopted a wide variety of practices with regard to the burden of shipping costs. Differences in practice reflect partly differences in market conditions, partly administrative decisions as to expediency, and partly the ability to enforce such decisions in a given economic and legal environment. Some sellers maintain a uniform price at their plants to all buyers regardless of their location, others quote uniform delivered prices in all markets or within defined geographic zones, still others vary their prices systematically or unsystematically in order to meet or undersell their rivals in all markets in which they wish to do business.

Some of these practices, notably basing point systems and zone systems, result in greatly limiting or eliminating price competition in the markets for the commodities affected, although competition may take other forms.

These types of geographic price structure, particularly the basing point system, have consequently been the subject of much controversy in discussions of the problems of monopoly and competition in industrial markets. The Federal Trade Commission has conducted intensive studies of geographic price structures in many industries. In recent hearings before the Temporary National Economic Com-

mittee the practices of the steel industry with regard to freight were considered in great detail.¹

There has not, however, been any general survey of the extent to which different types of geographic price structure are actually encountered in the American economy, nor of the considerations which favor the development of one or another type of practice. Such information seems needed for an adequate appraisal of the relationship between such practices as basing point systems, zone systems, and other means of freight equalization and the pattern of competition within an industry. Among the problems with which the Temporary National Economic Committee is immediately confronted is the adequacy of existing antitrust legislation to cope with geographic practices which may seem to impair the efficacy of price competition.

Part II of this volume is designed to yield the factual basis needed for such an appraisal, and as a guide to policy. It does not present conclusions nor recommendations, which are the province of the committee. It describes the geographic pricing structures of a wide variety of commodities; industrial, agricultural, and extractive. The list is by no means complete, but it is reasonably representative. The two chapters consider in order:

I. Types of Geographic Price Structure: A discussion of the importance of the element of freight as a market factor and a description of the more common types of geographic price structure.

II. Geographic Practices in American Markets: A product by product analysis of the types of geographic price structure currently observed followed by a summary indicating the extent of the more common types of geographic practice.

Part II was prepared by Saul Nelson with the assistance of William C. French, Jr. The data relating to geographic price structures of building materials were assembled by Walter G. Keim. Jesse M. Cutts of the Wholesale Price Division provided much of the basic information. Valuable assistance was accorded by trade association officials and business executives regarding the price structures of their respective industries. Mr. Edwin B. George of Dun & Bradstreet rendered material help in the planning of this study.

¹ See Temporary National Economic Committee Hearings, Parts 26 and 27.

CHAPTER I

TYPES OF GEOGRAPHIC PRICE STRUCTURE

INTRODUCTION

The importance of transportation costs.—The expense of physical transportation constitutes an important element in the total cost of preparing goods for the market. According to a recent estimate¹ the total cost of producing and distributing commodities for the national market during 1929 was \$65,600,000,000. Thirteen percent or \$8,800,000,000 of this total represented the cost of transportation.

According to the same estimate, only \$27,100,000,000 of the \$65,600,000,000 total represented the cost of physical production while \$38,500,000,000 constituted the cost of distribution. Consequently the cost of transporting commodities was almost one-third as great as the cost of physically producing them, and constituted 23 percent of the aggregate bill for distribution.

The \$8,800,000,000 bill for transportation included a variety of items: Rail freight, water freight, railway express, electric freight, motor trucking, pipe-line transportation, and parcel post. For most of these means of transportation, shipping rates are either fixed by law or are otherwise out of the control of the shipper or receiver of the goods transported. Partly as a result of this situation, freight rates are notoriously rigid; their variations are narrow and bear no apparent relationship to the movement of commodity prices. Consequently, the bill for transportation becomes proportionately much more important during periods when commodity prices are low or falling; it decreases in relative importance when commodity prices are high or rising.

The data quoted for 1929, therefore, probably represent an underestimate of the significance of freight during periods of low prices and limited use of resources, such as the last decade.

Unfortunately, there are no data readily available which would indicate the size of the total freight bill during the period since 1929. Some information is available relating to one of the most important single components of that bill—rail freight. According to the Interstate Commerce Commission,² rail freight revenue on class I roads for 1930 was \$4,200,000,000, or 6.7 percent of the total value of commodities transported. For 1933, the effect of the generally low price level was reflected in an increase of this ratio to 10.7 percent. As prices rose again the ratio declined to 8.5 percent for 1936, the last date for which these data were compiled.³

¹ Does Distribution Cost Too Much, Twentieth Century Fund, p. 118.

² Interstate Commerce Commission, Bureau of Statistics, Freight Revenue and Value of Commodities Transported on Class I Steam Railways in the United States, calendar year 1936.

³ These data are presented merely to show trend and are not at all comparable to those in the Twentieth Century Fund publication previously cited. A major difference is that the Interstate Commerce Commission figures include numerous duplications entering into the estimate of total value; for example, iron ore will first be included as such and will again enter into the value of shipments for semifinished and finished steel products. This results in an underestimate of the over-all significance of freight and thus differs from the Twentieth Century Fund data which are based upon the value of products in final form.

Factors affecting freight costs.—The importance of transportation costs varies very widely for different kinds of products. Many factors enter into the picture. One of the most important is the relation between the price of the product and its weight; other things being equal, freight will be relatively more significant for cheap, bulky items than for those which cost more per pound. For example, rail freight revenue represents 56 percent of the value of bituminous coal at destination and 46 percent of the value of salt, whereas it constitutes less than 10 percent for sulfur and only 5 percent for copper ore.

For the same reason freight will be a less important factor for manufactured goods than for their constituent raw materials; thus the percentage of freight revenue to value at destination for cereal food preparations is 3.4 percent as against 5.9 percent for wheat flour, 8 percent for wheat, 9.3 percent for corn, and 12.4 percent for oats.

Another significant factor is the location of supply in relation to the market. Where production is concentrated within a circumscribed area, while consumption is distributed throughout the United States, the average haul is likely to be long and the relative importance of freight considerable. Where centers of production are scattered or are located near most important centers of consumption, hauls are likely to be shorter and freight relatively less important. More generally, if production must be located near sources of raw material, freight for the finished product will be more important than when plants can be established at or near the markets.

Reference may also be made to perishability and the consequent need for special or expeditious handling which is probably responsible for the fact that freight constitutes 60 percent of value at destination of such products as grapes.⁴ Another element may be public policy, as in the case of the extremely low postal rates for newspapers and periodicals.

Economic significance.—Obviously, these costs of transportation must somehow be included in the price of the delivered product. There are many ways in which this can be done. Each buyer may be required to bear the full expense of shipping his particular purchase directly, or the seller may choose to defray this expense in the first instance and then to distribute it in various ways among all his customers. In the sale of most commodities, practices with regard to the manner in which freight charges are borne and distributed among the different buyers and sellers in the market have developed certain conventionalized patterns. These practices are commonly referred to as the "geographic price structure" for the product in question. The form they take in any particular case reflects the impact of many forces, such as the inherent characteristics of the market, the requirements of law as interpreted by courts and administrative agencies, and the policy decisions of businessmen acting in this environment. Geographic price structures in turn have far-reaching economic effects; they influence the character of competition within an industry, the location of its plants, and the prospects of profit or survival of individual concerns.

However, the appraisal of the economic implications of the different types of geographic price structure encountered in American industry is beyond the scope of the present study. The issues raised

⁴ In 1933, when prices were lower, the ratio for grapes was almost 65 percent. Interstate Commerce Commission, *op. cit.*

in such an appraisal are many and complex. Practices in particular industries, such as the basing point systems in the steel and cement industries,⁵ have been the subject of considerable and intensive analysis; yet conclusions regarding its merits and implications remain in considerable dispute. It is intended here merely to present factual data regarding the types of geographical price structure which characterize different sectors of American industry and thus to furnish a basis for broader analysis of the problem, as well as to permit a better understanding of the meaning of price and price quotations in different industries and markets.

Types of structure summarized.—The cost of shipment enters directly or indirectly into virtually every transfer of commodities between buyer and seller. There is, however, a very wide variation between different industries and even within industries as to the manner in which this element is related to the price quotation and charged to differently located buyers. Although there is usually a degree of uniformity in geographic pricing practice between companies which are competing in the sale of identical or similar products, this is not necessarily the case. Moreover, the same company may vary its methods of price quotation for different parts of the country or to meet special situations encountered in particular transactions or groups of transactions. Changes in structure are also likely to occur from time to time under the impact of altering market conditions or the requirements imposed by Government through law or administrative action. Consequently, any analysis of geographic price structures must start with a recognition that they are not rigid or immutable, although specific patterns may persist for long periods of time in individual industries. Before proceeding to consider different types of geographic structure in detail, it is useful to summarize briefly patterns of variation which may actually occur. Among the more common are—

(1) The amount paid by each buyer varies in precise accordance with the cost of transporting the product from point of shipment to point of destination.

(2) Unsystematic schemes of freight equalization in which a seller will reduce his price on particular transactions in order to meet or better the offer of a competing seller who is more advantageously located.

(3) Systematic schemes of freight equalization in which this type of adjustment follows some set pattern which is generally observed by all or most competing sellers.

(4) Single or multiple basing-point schemes in which the amount of freight charged to individual buyers varies in accordance with shipping costs from one or more basing points recognized by the industry. These basing points usually represent important producing centers, but in a true basing-point system there will always be some plants which are not located at any basing point.

(5) Zone pricing in which the delivered prices paid by buyers are uniform throughout certain conventionally accepted geographic areas but vary between areas.

⁵ Probably the most intensive work on this subject has been done by the Federal Trade Commission. See for example Price Bases Inquiry, The Basing Point Formula and Cement Prices, Federal Trade Commission March 1932.

(6) Uniform delivered prices in which the same delivered price is paid by all buyers in the United States wherever located.

(7) Unsystematic price variation in which the prices in particular markets show no direct relation to shipping costs. They may be set arbitrarily to meet peculiar competitive conditions, or they may vary constantly with day-to-day changes in supply or demand in those markets.

(8) Various combinations of the above.

The differences enumerated all relate to the way in which the amounts paid by buyers and the net returns of sellers vary on sales to different localities. In addition, the form of quotation may have a bearing upon the implications of the sales contract, particularly as regards the distribution of risk of shipment between buyer and seller. Thus there is a distinction in principle between prices which are quoted at the point of shipment—f. o. b.⁶ pricing—and prices which are quoted at the point of delivery—delivered pricing.⁷ In the former case, transfer of title to goods may take place at the point of shipment, such as the seller's plant or warehouse, and the cost and responsibility of shipment is borne by the buyer. In the latter case, transfer of title may not occur until the merchandise is delivered to the point at which the seller is located, with the risk of shipment borne directly by the seller. However, the point at which title passes and burden of risk in any specific instance cannot be determined merely by referring to the form of the quotation, since other factors such as the terms of the bill of lading, the sales contract and the intent of the parties are also involved.

Insofar as this distinction relates merely to the form of quotation, it does not carry with it any necessary implication as to the variation of prices between differently located buyers. It is true that basing-point systems, by their very nature, require that prices be quoted on a delivered basis. However, f. o. b. prices may be so adjusted for differences in freight, that the actual delivered cost of the product is the same to all buyers throughout the United States or within a given zone; conversely, delivered prices may include the full cost of freight in every instance and vary in precise accordance with differences in shipping costs. While the latter situation is unusual, the former is quite common. Many concerns quote prices f. o. b. plant with full freight allowed, which is equivalent to a uniform delivered price. When freight is thus "allowed," the buyer ordinarily pays the transportation agency in the first instance and then deducts the amount of this payment from the invoice. In some cases, freight is not only allowed but also prepaid, under which circumstances the seller pays the cost of shipment at the source, thus relieving the buyer of the necessity for advancing freight charges.⁸

⁶ These initials are an abbreviation for "free on board" and indicate that the quotation includes the expense of placing the merchandise on railroad cars or other means of transportation indicated at the point named, with the buyer bearing the expense and responsibility of shipment from that point. E. g., f. o. b. cars, Chicago, means that the price includes placing the merchandise on railroad cars at Chicago.

⁷ In this and the subsequent discussion the terms "price" and "market" are used both in relation to the point of origin and the point of destination; the specific meaning in each case is indicated by the context. It should be noted, however, that "price" and "market" to the consumer may mean one thing; they may mean quite another to the businessman; they may have still another meaning to government agencies charged with the duty of determining whether industrial pricing policies suppress free and fair competition. It is not the purpose of this monograph to take any position with respect to these various viewpoints about "price" and "market" or their legal and economic implications.

⁸ The distinction between "freight allowed" and "freight prepaid," since it is reflected in the gross amount of the invoice, may also affect the amount of cash and other discounts which may be figured on the gross amount as a base.

However, too much emphasis should not be imputed to the mere form of quotation, even as it relates to the point at which title passes. Thus it may be questioned whether the free and unreserved transfer of title at the point of shipment is compatible with any system involving freight allowances. Certainly it is not ordinarily within the intent of the seller that the buyer should be free to divert the shipment before it reaches its announced destination. If this were not true, it would be possible for a buyer located at some distance from the point of shipment to take advantage of his freight allowance by reselling the merchandise at a profit to another buyer who is located closer to the source of supply and who would not, therefore, be entitled to as large an allowance. Presumably, therefore, the reservation that the shipment must proceed to its announced destination is implied in any system involving freight allowances. To that extent any such system differs from straight *f. o. b.* mill pricing in which the buyer can do as he will with the merchandise once he receives delivery at the mill door.

In addition, reference may be made to the type of quotation known as "*c. i. f.*" which is often used in connection with goods shipped by water. The initials represent an abbreviation for "cost, insurance, freight," and mean that the quoted price includes the cost of freight and insurance to the port specified, and delivery in good condition to railroad cars or trucks at that port, with the buyer bearing the expense and responsibility of further transportation.⁹ The initials "*f. a. s.*," meaning "free alongside," are also used in connection with water transportation and differ from "*c. i. f.*" in that the buyer accepts delivery at the wharf and must arrange for loading the merchandise on cars or trucks for the land shipment.

COMMON FORMS OF STRUCTURE—DEVELOPMENT AND CHARACTERISTICS

The form of geographic price structure which prevails in the market for any commodity reflects the operation of a host of factors. Among the more important of these is the intensity and focus of competition including the relative emphasis upon price or nonprice rivalry, the degree of geographic concentration of the industry, the location of sources of supply in relation to markets, the relative importance of transportation costs as an element in the price of the commodity, the channels of distribution utilized, the extent of economic concentration among sellers and among buyers, the interest of sellers in maintaining control over resale prices and conditions, etc. The way in which conditions of this kind are actually reflected in the geographic price structure, and the consistency with which such a structure is observed, will also be affected very considerably by the degree of freedom which individual sellers or groups of sellers have in formulating and maintaining price policies. The possible impact of these forces upon some of the more common types of geographic price structure will illustrate the issues involved.

F. o. b. plant prices.—Probably the simplest type of structure is the *f. o. b.* system of pricing with no freight allowed. Under this system all delivery charges are borne by the buyer who accepts delivery at the point of shipment; the price charged by the seller to buyers will not be adjusted in any way to reflect the varying transportation charges

⁹ Less common variants of this type of quotation are "*c. i. f. e.*," which indicate that the quotation includes provision for converting foreign exchange; and "*c. & f.*" which mean that the buyer must arrange for insurance during the marine transit.

which the latter are called upon to pay because of their different locations. The same practical result, except as relates to risk of shipment, can be achieved by a delivered price system in which the delivered price includes actual full freight in every case, but this is not a usual practice. This type of structure yields the seller a net return on all sales which is independent of his destination and which will be uniform insofar as all other terms of sale (e. g., quantity discounts) are identical. It is most likely to be encountered in those cases in which there is no severe pressure upon the seller to reduce his prices in certain markets to meet the competition of some rival who happens to be more advantageously located with respect to that market. This condition will be fulfilled, for example, when all sellers of a given commodity are located in a narrowly circumscribed geographic area so that the cost of shipping the product from any plant to any market is practically the same as that of shipping it from any other plant to the same market. Turpentine, which is produced largely in Florida and Georgia is an example, as is the women's dress industry¹⁰ which is almost entirely concentrated in the New York area, and the automobile industry in Michigan before the establishment of assembling plants at other points. These conditions could also be fulfilled by a seller who enjoys an outright monopoly, or who has succeeded in creating unique consumer acceptance for his product, so that there is no effective pressure from substitute products at any point. A similar situation may occur where freight is so small a part of the price of the finished product that it does not constitute an important competitive factor, particularly where emphasis is upon nonprice elements such as style; thus most apparel is sold on the basis of a uniform f. o. b. price. The existence of material differences in the quality or design of competing products may even permit uniform f. o. b. plant prices to be used in connection with items for which freight is a material element; thus milling and grinding machines may be sold on this basis.

These considerations relate, of course, only to the territory actually served by the seller in question. The existence of numerous sources of supply throughout the United States—or outside it—need not affect the structure so long as the product from each source is distributed in a geographically circumscribed area which does not seriously overlap the area served by other sources. For example, the existence of important phosphate rock mines in Tennessee does not appreciably affect the pricing practices of the producers of phosphate pebble in Florida, so long as they sell in distinct markets.

Freight equalization.—When there is more than one geographic source of supply and one seller seeks to expand his territory into an area contiguous to the other, modification of this simple structure is likely to occur. From the point of view of the buyer, it must be emphasized, the significant element is the total price which he is called upon to pay at destination, and not the seller's net realization. This does not deny that buyers have a very substantial interest in the geographic pricing practices of sellers as they affect the character or intensity of competition and the level or behavior of prices; the advantages derived from freight concessions or allowances are often apparent rather than real. To the individual buyer on any single purchase, however, the total cost at destination is the item of immediate concern.

¹⁰ This refers to the women's dress industry proper, and not to the house dress or wash frock industry which is much more decentralized.

In the sale of a standard commodity, therefore, sellers who distribute through a wide geographic area are likely to meet constant pressure to adjust their prices on individual transactions to meet the offer of competing sellers who happen to be nearer freightwise. To illustrate: assume two rival producers located in New York and Chicago, respectively, who are selling identical commodities. Suppose that Philadelphia and St. Louis are two important markets, that both sellers are using a simple f. o. b. system of pricing, and that the plant prices of both are initially identical. Obviously, the New York producer will not be able to sell in St. Louis, nor the Chicago producer in Philadelphia. Originally this may have presented no problem, because the New York manufacturer found ample markets in eastern territory, while the Chicago producer was able to dispose of all his merchandise in the Midwest. With the passing of time, however, and the expansion of plant facilities, one producer may readily find himself with surplus capacity or surplus product on his hands which cannot at the moment be absorbed by the territory which he has been accustomed to serve. If under such circumstances the New York firm learns that a buyer in St. Louis is in the market for a substantial order, it is likely to attempt to invade the St. Louis territory and to meet or better the offer of the Chicago producer at that point.

Of course, one way in which the New York producer can reduce his price to the St. Louis buyer sufficiently to meet Chicago competition would be simply to cut his plant price to all comers by an amount sufficient to compensate for the difference in freight. In general, however, such a course would involve so large a loss on sales in nearby areas that the benefit from making occasional sales in remoter areas would be completely lost. Consequently a much more expedient and likely decision would be to cut prices only on the St. Louis transaction by an amount approximately equal to the difference in freight. If prices are quoted on a delivered basis, this can be done directly; if an f. o. b. system is used, the quotation can be reduced by the discount necessary to make the sale.

Some such process of "freight absorption" is likely to occur whenever geographically separated sellers of reasonably similar products are competing in the same markets and is probably the alternative to a strict limitation of the sales territory of each seller to the area which he can serve most economically. The tendency to sell in remote areas is augmented by fluctuations in local demand, which are constantly and inevitably occurring, and as soon as sales territories overlap some form of freight absorption or "equalization" is likely to occur.¹¹

It should be emphasized that the foregoing illustration is strictly hypothetical. It was presented merely to suggest the way in which pressure to adjust delivered prices in competitive territories may arise initially. The actual process of adjustment is rarely so simple or "natural." In practice, freight equalization assumes much more conventional forms than the sort of simple adjustment to meet the needs of the individual transaction which has just been described. In many industries there are systematic schemes of freight equalization which are more or less closely observed by all sellers and which are far too elaborate in detail to represent purely spontaneous develop-

¹¹ Something akin to equalization may occur within the organization of a large company, as well as between competitors. Thus a large agricultural implement producer has a main factory in Chicago with numerous more specialized plants in other cities. On sales from these latter plants freight is charged from plant or from Chicago, whichever is lower.

ments. Moreover these schemes are often found in conjunction with arrangements for maintaining well-defined relationships between the prices at different plants, thereby permitting a substantial degree of control over the entire price structure. Such practices, if rigidly observed, effectively limit the possibility of price competition.

On the other hand, it should not be inferred that the existence of such a systematic scheme of freight equalization is per se an indication of the absence of effective price competition.¹² All that can be said is that the more complex and conventional types of geographic price structure often spring not from natural adjustments to the market but from a conscious effort on the part of concerns in an industry to limit or eliminate price competition and that they may even be indispensable tools to this end. Thus although the more obviously artificial types of geographic price structure are frequently encountered under circumstances which give rise to suspicion of collusive restraint of trade, yet it is not necessarily true that their existence is either the direct cause or manifestation of such collusion. It is theoretically possible, for example, that aggressive price cutting should take place within the framework of such a system as well as without it.

Geographic price structures of this kind take many forms. In the case of many heavy chemicals such as sulfuric acid, for example, plant price quotations are apparently uniform for all plants of all companies throughout the United States.¹³ Freight is equalized on the basis of shipping costs from the plant nearest the point of delivery.¹⁴ Since the location of all plants in these industries is known, all producers will tend to quote the same delivered price in any market.

Another common type of equalization involves a division of the country into zones. Plant prices in each zone are uniform and freight is equalized as before, to the plant nearest the point of delivery. Asphalt shingles and floor tiles furnish examples of this very common type of structure. A further degree of simplification may be introduced by the adoption of a standard relationship between plant prices in different zones; the price in one zone automatically determines plant prices in all other zones by the application of a simple scheme of discounts or additions. Here again a high degree of price uniformity between rival producers is readily attainable because the structure is so conventionalized.

In some cases sellers find it expedient to set certain limits to the amount of freight which they are willing to absorb in connection with equalization schemes of this sort. The limit may be based upon the location of the point of delivery, the alternative shipping point for which equalization is computed, the size of the order, or the actual cost involved. For example, unlimited equalization for floor tiles is confined to a few items such as the standard one-inch hexagonal tile; for other products it is restricted in accordance with various criteria. Equalization may be allowed only on sales of a specified quantity; thus in the case of soda ash and caustic soda the practice is to equalize freight only on carload shipments presumably because the higher

¹² These comments apply equally to the basing point and zone structures described subsequently.

¹³ There is some evidence that this practice is more strictly observed on "spot" sales than on contracts covering a period of time; the latter type of transaction seems to be subject to some variation, especially when the buyer can exert substantial bargaining pressure.

¹⁴ In this and all subsequent discussion the phrase "nearest the point of delivery" should be understood in terms of freight cost and not of physical mileage. In other words, "nearest" is used as shorthand for "having lowest shipping costs to."

l. c. l. rates would require disproportionate absorption. Reservations of this kind as to the maximum amount of freight which the seller is willing to absorb have the effect of limiting the potential sales territory correspondingly and presumably reflect a decision that sales to more distant points or of smaller quantities involve an unjustifiable sacrifice of plant net. In principle, a concern may be willing to absorb freight up to the point at which the resulting net realization is adequate to cover little more than direct out-of-pocket costs; in practice conventional arrangements within an industry often result in setting much narrower limits to freight absorption.

The schemes of freight equalization so far considered all involve the acceptance of reduced plant realizations by the seller on sales to distant points. On sales to immediately surrounding territory, however, prices remain on a uniform plant-net basis and the price to the purchaser at the plant door will be lower than to buyers twenty or a hundred miles away. In other words, the location of each mill governs the price structure in the contiguous area and the erection of a new plant in new territory will be reflected automatically by a change in delivered prices in that territory.

Basing-point systems.—It is in this last respect that schemes of systematic freight equalization differ fundamentally from basing-point systems. The simplest form of this structure is the single basing-point system. Delivered prices at any point in the United States are related to a "base" price at some single important producing center and are arrived at by adding to this base price the freight rate (usually for all-rail shipment) from that point to the point of delivery. This was the type of structure, for example, which prevailed in the steel industry between 1900 and 1926 except for certain temporary lapses and was known as "Pittsburgh Plus." As the name implies, the delivered price at any locality was the base price at Pittsburgh, plus freight from Pittsburgh. Thus for a mill located, say, at Chicago, the delivered price on sales at the mill door would include full freight from Pittsburgh; the price to purchasers farther from the point of shipment but nearer freightwise to Pittsburgh would be substantially less. The seller would charge fictitious freight on the former transaction and perhaps absorb some freight on the latter.

In contrast to the systems of freight equalization previously described, which may have developed naturally as mills enlarged their territories, there is evidence that one of the important considerations leading to the adoption of the basing-point system, at least in the case of the steel industry, was to restrict price competition as far as possible. According to evidence presented to the Temporary National Economic Committee, based upon an earlier investigation by the Federal Trade Commission, the Pittsburgh-Plus system originated under the following circumstances:

No systematic Pittsburgh-Plus system had been adopted by the steel producers at the time of Pittsburgh's greatest predominance in the steel industry or until after 1900. From 1873 or earlier to 1903 steel producers attempted generally with some success to fix prices for steel products through pools, price-fixing trade meetings, and later on through what are known as the "Gary Dinners." From 1903 to 1909 the Pittsburgh-Plus system of quoting and selling steel products was used in connection with and as a basis for the price-fixing activities of the steel producers. From 1909 to the present time, with minor interruptions, the Pittsburgh-Plus system has been used by the steel producers independently of such

pools, price-fixing trade meetings, and Gary Dinners for the purpose and with the effect of reaching uniform delivered prices.

In 1921, with the advent of price competition on plates, shapes, and bars, the Pittsburgh-Plus system was discontinued by the Chicago district mills in their sales of those products, but not in their sales of sheets and tin plate and wire and wire products, in which articles in that district and everywhere else Pittsburgh-Plus prices still prevail.

The wire nail producers, including the Respondent, American Steel & Wire Co., agreed on zone prices in May 1898. In 1904 the large wire producers agreed to maintain uniform prices by means of the Pittsburgh-Plus system.

Prior to the year 1900 sheet steel was not sold on the Pittsburgh-Plus system, and even after the absorption of a large number of sheet mills by the American Sheet Steel Co., which was later taken over by Respondent, American Sheet & Tin Plate Co., that company sold its sheets in the Chicago district f. o. b. its mills in that district. In the fall of 1900, however, that company inaugurated the Pittsburgh-Plus system in selling its sheets, and the Respondent, American Sheet & Tin Plate Co., has followed the system ever since, practically without exception.

Prior to 1900 to 1903 tin mills sold their products generally f. o. b. mill, but after absorption of many tin mills by the American Tin Plate Co., which was shortly after taken over by Respondent, American Sheet & Tin Plate Co., that company inaugurated the Pittsburgh-Plus system in selling its tin plate from its various mills.

In 1903, it announced as to its Indiana mills that tin plate would no longer be sold f. o. b. the Indiana mills but would be sold thereafter on the Pittsburgh-Plus system because of the higher cost of production at the Indiana mills. The respondent, American Sheet & Tin Plate Co., has continued the Pittsburgh-Plus system ever since on tin plate.¹⁵

Further excerpts from the Federal Trade Commission inquiry, as reported at these hearings, include the testimony of Col. Henry Bope, who was vice president of the Carnegie Corporation after it was taken over by the United States Steel Corporation. This testimony throws further light upon some of the considerations involved in the adoption of Pittsburgh Plus.

Q. Going back to the original organization, what connection did the Pittsburgh-base system have with that?

A. (Colonel Bope) The price was made, based upon Pittsburgh, because the Carnegie Bros. & Co. were the largest manufacturers, and it was felt they should have the say as to what the price should be, and how it should be established at the main point, so as to give stability of prices, which had been fluctuating all over the lot.

Q. By that do you mean to get uniform prices?

A. To get uniform prices.

Q. Before that time what was the practice?

A. The practice was generally to quote f. o. b. mills. Every mill was a law unto itself.

Q. And the difference in prices between the mills, did that amount to the freight rate, or was it entirely independent?

A. Each mill made whatever price seemed necessary to take the business.

Q. What was the necessity for a basing point? Could they maintain prices without a basing point?

A. No. They tried it once in 1909 and got into such chaos in a short time that the mills were glad to get back to the old base. Every system has to have some stabilizing point, and Pittsburgh, from its natural location, its natural advantages, and everything of that sort, seemed to be the natural basing point.¹⁶

The maintenance of the Pittsburgh-Plus system greatly simplified the preservation of price uniformity within the industry. It was manifestly easier to make sure that all competitors charged the same price at every market if they all quoted on an f. o. b. Pittsburgh basis than would be true if each quoted f. o. b. the nearest mill. Since most concerns preferred to avoid price competition, this was considered a very important advantage.

¹⁵ See Temporary National Economic Committee Hearings, Part 27, afternoon session, January 29, 1940.

¹⁶ Ibid.

As an industry becomes more decentralized, however, the maintenance of a simple basing-point system of this kind becomes increasingly difficult. It is likely to incur growing resentment from buyers who are located near a mill distant from the basing point, and who do not see why they should be called upon to pay fictitious freight from the basing point upon shipments which actually travel only a short distance. Moreover, there is doubt as to the legality of single basing point systems under the Sherman and Clayton Acts and under the Robinson-Patman Act. Consequently there has been a shift in many industries to the so-called multiple basing-point system in which the basing-point principle is retained but the number of basing points is increased materially to reflect the establishment of important new producing centers. Thus the steel industry shifted from the single to the multiple basing-point system in 1926, at least partly because of pressure by the Federal Trade Commission.¹⁷ The price actually paid by the buyer for delivery at any point then becomes the lowest sum of the price at any basing point and freight from that basing point.

Since an important aim of the basing-point system, whether single or multiple, is the maintenance of price uniformity, it is essential to its successful operation that all sellers calculate their freight charges in the same way. For this purpose "freight books" are frequently issued by leading companies or by trade associations; these books indicate the freight charges which are to be used in calculating the cost of shipment from any basing point to any important market. The rates shown in these books do not necessarily conform in every detail with actual freight charges but usually follow them rather closely. They usually seek to discourage cheaper means of transportation such as water shipment and motor truck, since to do this would permit the buyer to effect a price reduction by selecting a more economical mode of transit and thereby to interfere with the maintenance of uniformity. In the steel industry, for example, although a buyer is permitted to accept plant delivery in his own truck he is generally required to pay a premium amounting to 35 percent of the cost of all rail delivery for this privilege.¹⁸ The entire structure is frankly arbitrary, and is predicated at least in part on the assumption that price competition is not desirable. It was admitted by President Fairless of the United States Steel Corporation that the effect of the basing-point system, if it were always faithfully observed, would be to eliminate price competition in the industry entirely. According to Mr. Fairless:

It seems to me that for all practical purposes and for the conservation of time, which I believe is important to all of us, we will concede, if that is the point that you are trying to make, that if base prices as announced were followed in every transaction, and that the nearest basing point to the consumer governed, and that the rail freight was added from that point, and the delivered price arrived at in that manner, there wouldn't be any competition in the steel industry. It would be a one-price industry, pure and simple.¹⁹

However, in common with most other systems of pricing, discounts and concessions from the nominal price level are granted sellers under certain circumstances. Such concessions are most common during a buyers' market when the pressure to obtain business is most acute.

¹⁷ A cease and desist order was issued by the Federal Trade Commission against the United States Steel Corporation on July 21, 1924, Docket No. 760.

¹⁸ See Temporary National Economic Committee Hearings, Part 27, afternoon session, January 26, 1940.

¹⁹ *Ibid.*

Although the basing-point system has been described in terms of the steel industry, it should not be inferred that this is the only important area in which it is encountered. Cast-iron soil pipe, for example, has been sold on the basis of a single basing point in Birmingham, Ala. The pulp, sugar, cement, and lead industries all use multiple basing-point systems. In some cases basing-point systems are observed with respect to part of the market only; for instance, benzol is priced f. o. b. Minnequa, Colo., only on sales in the region "Omaha and West" and gasoline is sold f. o. b. Tulsa only in parts of the Midwest. In each case the system may be adjusted to the peculiar needs of the industry involved and some of its more important variations will be described in the following chapter.

"Postage stamp" and zone systems.—For all the geographic structures so far considered, delivered prices at any point are arrived at by taking some combination of plant price and shipping costs, though as was pointed out, the addition for shipping charges is often arbitrary rather than actual. Delivered prices vary from locality to locality depending upon its distance freightwise from whatever point is the actual or nominal base of shipment.

There is a second major type of structure which does not display any such point-to-point variation but in which delivered prices are uniform either throughout the entire United States or within certain defined geographic zones. This may be accomplished either by quoting delivered prices directly, or by quoting f. o. b. prices and allowing full freight.

Uniform delivered prices throughout the United States are most commonly encountered when shipping costs are relatively minor in relation to the value of the commodity. They are frequent in the case of nationally advertised consumer goods, particularly where some effort is made by the manufacturer to control resale prices as for nationally advertised drugs and cosmetics. When the manufacturer advertises a list price for his product or fixes minimum resale prices in accordance with State price maintenance laws, there is an obvious advantage in geographic price uniformity, since otherwise distributors in one section of the country would be forced to accept smaller mark-ups than those in other sections. Even in the absence of resale price maintenance, delivered price uniformity may be favored as a means of reducing the incentive to distributors to encroach on each other's territory.²⁰ Uniform delivered prices are also quoted for some industrial products when freight is a minor element; this practice is followed, for example, in the case of aluminum.²¹

²⁰ Thus, according to a recent article in the *Quarterly Journal of Economics*:

"The policy of quoting prices freight allowed is frequently said by manufacturers to be used in order to place their distributors in adjoining territories on 'an equal competitive basis'; and further, at times to give the wholesale trade the same mark-up in a policy of maintaining national, uniform, resale prices. With a quoting of prices f. o. b. factory, freight allowed to jobbers' warehouses, any given jobber would be at a disadvantage in entering another's territory even though he had general salesmen in that field. Thus a manufacturer of air-rifle shot in assigning a reason for the use of the freight allowed policy said: 'To make landed cost to distributors everywhere the same and thus localize each jobber's business and keep far-away jobbers from entering others' territory.' Other typical answers of various manufacturers were 'to put all distributors on the same cost basis regardless of location, so that they can compete on an equal basis of cost'; 'to give jobbers the same cost'; and 'so that distributors of our products in adjoining territories will be on an equal competitive basis.'"

"The desire of manufacturers to give the wholesale trade the same mark-up in a program of national, uniform resale prices is illustrated by the following statement recently sent by a glass manufacturer to its jobbers. ' . . . Glass Works will carry the freight burden, enabling jobbers to operate with a fixed gross profit uninfluenced by varying freight rates, undisturbed by their fluctuations. Suggested retail prices will be the same for east and west. Allowed freight eliminates the need for a differential.' " (The *Quarterly Journal of Economics*, vol. LIV, February 1940, "The 'Freight Allowed' Method of Price Quotation" by Vernon A. Mund, pp. 238, 239.)

²¹ According to the Interstate Commerce Commission rail freight during 1936 represented 3.24 percent of the value of aluminum at destination.

A distinction may be made between commodities which are delivered at the same price (or on which full freight is allowed) to any destination in the United States and those for which this privilege extends only to established distributing or jobbing centers, with purchasers not located at such centers being required to pay the expense of further transportation. The former practice is more commonly associated with light goods, such as pharmaceutical products and the latter with heavier merchandise, such as building materials, but practice is by no means consistent. Since in general most important consuming areas are recognized as distributing points, delivered price uniformity at such points is often equivalent to uniformity for the bulk of the market.

In some cases uniform delivered prices may be combined with plant pricing in such a way that they act as a ceiling to the market, rather than as a universal price. Thus carbon black in less-than-carload lots can be purchased either f. o. b. plant, or, at the buyer's option, it will be delivered anywhere in the United States for a fixed premium.

Instead of nation-wide uniformity, delivered prices may be kept constant throughout certain defined geographic zones. The extent of these zones varies considerably; one may take in all the area east or west of the Mississippi or east or west of the Rockies, or it may be restricted to the limits of a single State or part of a State. An important factor is again the relative cost of shipment; where this is high, the zones are likely to be narrower than when it is low. As in the case of basing point systems, zone systems often reflect the historical development of the industry. Thus where scattered sources of supply are competing within certain geographically limited markets, there may be a tendency for price uniformity within such markets to exist. Such dividing lines as the Mississippi River or the Rocky Mountains may be explained both by the gradual extension of markets into areas previously untapped and by the nature of the railroad freight rate structure itself.

There are numerous examples of zone systems in many different kinds of industries. Many chemicals such as carbon black, carbon tetrachloride, and anhydrous ammonia are priced on a zone basis. A highly developed system of 19 zones and many subzones and even subdivisions of subzones is used in the market for fertilizer. Zone systems are observed in the sale of paper with the number of zones varying widely for different products. Thus, there are 10 zones for newsprint and 4 for fine papers. As in the case of uniform delivered prices, zone prices sometimes apply to any destination within the zone and sometimes only to distributing or jobbing centers.

In most cases, the boundaries of zones have become generally recognized throughout the industry and are observed by all competing sellers, except insofar as prices may be cut on particular transactions in order to obtain a desired order. However, this is not always the case. For example, most refrigerator manufacturers maintain a zone system for the retail markets of their products, but zone boundaries are not the same for all producers. Moreover, since the beginning of 1940 one manufacturer has recently announced uniform prices for the entire region east of the Rockies.

Sometimes zone systems apply at one market level, but not at others. Thus, certain electric refrigerators are sold to wholesale distributors on an f. o. b. plant basis, and distributors resell to retail

dealers on a zone basis. The same practice seems to be true in the case of fine paper.

Zone limits may be used to set a maximum price for the area rather than a fixed price applicable to all customers. For example, buyers of fertilizers who happen to be located near certain ports are able to buy on what amounts to an f. o. b. port basis; prices increase with the distance from the port until the maximum for the zone is reached; beyond this point there is no further advance. Frequently zone prices apply on purchases of a specified minimum quantity only, usually a carload. This is true, for example, of fertilizer, carbon black, and numerous other products. Sometimes the situation is reversed, with the zone structure applying to small shipments only, while some other basis is used for larger orders. For instance, caustic soda and soda ash in carload lots are sold freight equalized, but for l. c. l. lots prices are on a zone basis.

The relationship between prices in different zones may or may not be fixed by custom. In the case of newsprint, for example, the price in any zone can be derived by applying a premium or deduction to the quoted price in an accepted "base" zone. A similar practice is followed in the case of many other commodities. On the other hand, zone differentials may vary considerably from time to time with the price in each area determined by conditions in that area.

One further variant of the zone type of structure which is commonly encountered is the "free delivery zone." In the case of many kinds of apparel, for example, such as women's dresses, there is no charge for delivery within the metropolitan area in which the garment is manufactured. The prices in all other areas are on an f. o. b. plant basis. In some instances the free delivery zone may be dictated by competitive considerations rather than by the location of the producing plant. Thus some manufacturers of men's shirts make no charge for delivery in the New York City area, even though their plants may be at some distance from that city. As is evident from these examples, the existence of a free delivery zone or zones does not necessarily imply the observance of a zone structure in other areas.

Buyer dominated structures—equalization at the point of origin.—So far, geographic price structures have been described in relation to the marketing policies of sellers. It has been suggested that sporadic freight absorption may reflect a concern's desire to extend sales into an area in which a rival enjoys a freight advantage, while some of the more conventionalized forms of structure may represent efforts to limit or eliminate the influence of price competition as a market factor. In the latter situation, particularly, this has involved the implicit assumption that decisions as to price policy were largely in the hands of sellers and that buyers either could do little to alter such decisions or else acquiesce in them as mutually beneficial. While this assumption is obviously an oversimplification, it probably does not materially misrepresent the usual situation in most industrial markets. The breakdowns of structure which occur during a depressed buyers' market merely emphasize the rule.

There are, however, numerous sectors of the market in which buyers, and not sellers, normally hold the balance of power. In such cases it may be to the interest of these buyers to avoid competing among themselves in their purchases of raw materials. Just as price competi-

tion among sellers may force prices down, so price competition among buyers may bid prices up. There is some evidence that geographic price structures may occasionally be adapted to prevent the latter as well as the former type of price competition. Under such circumstances prices will be quoted and published by buyers rather than by sellers, and they will be equalized at the point of shipment rather than at the point of delivery. Clear instances of this kind are uncommon, but they do occur. Two such cases—nonferrous scrap metal and, at least until recently, cottonseed—will be described in the next chapter. Crude petroleum is another possible example.

Unsystematic price variation.—Finally, there are types of geographic price variation which do not fit into any of these more or less clear-cut patterns. For example, prices in different markets may be largely out of the control of the seller, as in the case of fresh fruits or vegetables sold at auction or on consignment. Special competitive situations may exist in particular markets which make it necessary to deviate from the general practice on sales in those areas. Thus where imports are competing with domestic sources of supply, prices at important ports of entry may bear no direct relation to the general domestic price structure. For example, because of the competition of imports the price of cement in New York is not related to the general basing-point structure of that industry; in the language of the industry, New York is an “arbitrary” point.

In practice, the types of structure which have been considered are subject to almost infinite variation and combination to meet the peculiar needs of specific markets. Some of these will be illustrated in the following chapter, which describes the patterns of price variation actually found in various sectors of the American economy.

CHAPTER II

GEOGRAPHIC PRACTICES IN AMERICAN MARKETS

METHODS OF ANALYSIS

The preceding chapter included a description of most of the more common types of price structure encountered in American markets. In the following pages, practices actually observed in connection with the sale of a wide range of commodities are described. The commodities discussed were selected partly on the basis of availability of data and partly in an effort to include a representative group illustrating a wide diversity of market situations.

The analysis is extensive and not intensive. It has not been possible to consider the geographic price structure for any commodity in full detail, since to do so would far transcend the limitations of time, personnel, and space which have been allotted to this study. The primary purpose of this study, as stated in the preface, was to afford some indication of the extent to which particular kinds of geographic price structure are observed in different sectors of industry and in the economy generally, and it is in the light of this purpose that the following discussion should be interpreted.

The data upon which the analysis is based have been compiled from a wide variety of sources. The most important of these was direct contact with members of industry and trade association officials. In addition, much information was obtained from experts in other agencies of the Government, from published studies of the Federal Trade Commission, the Department of Agriculture, and other Federal departments, from trade publications, and from records of the Wholesale Price Division of the Bureau of Labor Statistics. Information with regard to steel and petroleum products is primarily based upon testimony presented at hearings before the Temporary National Economic Committee. Data relating to building materials largely reflect the results of a detailed field study which has been conducted by the Temporary National Economic Committee Studies Section of the Bureau of Labor Statistics. In addition, various reports of the National Recovery Administration proved useful as source material in casting added light upon current practices, but they were not relied upon *per se* as evidence of existing geographic price structures. Some information was also obtained from a recent study by Vernon A. Mund, published in the *Harvard Quarterly Journal of Economics*.¹

This chapter considers commodities and broad commodity groups in the following order:

Agricultural commodities.

Food and kindred products.

Textiles and textile products.

¹ Op. cit.

Leather and its major products.
Tobacco products.
Steel and steel products.
Lumber and its products.
Turpentine.
Building materials other than steel and lumber.
Furniture.
Chemicals.
Drugs, cosmetics, and toiletries.
Fertilizer.
Paper and pulp industries.
Passenger automobiles.
Agricultural implements and machinery.
Machinery and related products, other than automotive and agricultural.
Electrical household equipment.
Nonferrous metals.
Petroleum and its products.
Bituminous coal.

These analyses of conditions in specific markets are followed by a summary of the major distinct types of geographic price structure, indicating the products and sectors of industry for which each was encountered.

AGRICULTURAL COMMODITIES

The geographic price structures of agricultural commodities are rarely as well defined as those for the products of industry. The reasons for this are obvious. The number of sellers in any market is usually so great that no one of them can exert any appreciable influence upon the prices which he receives for his crops. Since the price itself is largely beyond his control, there is little opportunity for the development of any rigid conventional practices regarding collateral terms of sale, such as the payment of freight charges. At the same time there are many different kinds of buyers in the market, purchasing under different conditions and for different ultimate uses and destinations.

Nevertheless there are certain broad price relationships and certain customs with regard to the payment of freight costs which have displayed a degree of persistence and which apply to substantial sectors of the market. In contrast with the geographic price structures which prevail for manufactured commodities, however, these relationships usually represent inevitable adjustments to characteristics inherent in the market, rather than business policy decisions, although the influence of the latter may be revealed in some minor details.

In general, the pattern of geographic variation of the prices received by producers of agricultural commodities is governed in the first instance by the location of major terminal markets. In some cases, as for fresh fruits and vegetables, such markets exist at most important centers of consumption, which also serve as points of distribution for the surrounding territory. For staple commodities, and particularly those traded in organized exchanges or in futures markets,

these terminal markets are more narrowly concentrated and represent primarily points at which the product is collected for distribution throughout the United States.

In surplus producing areas, that is in those sections which raise more of the product than can be used locally, the price received by growers tends to be determined by the price prevailing at the terminal market, less the cost of transportation to that market. In deficit areas which raise less than they consume, the reverse relationship will be encountered and growers may receive a price limited by the terminal market price, plus the cost of transportation. For export commodities, such as wheat, the controlling element will be not only the domestic requirements of any area but also export demand.

In both surplus and deficit areas the price relationships just described are limiting relationships which may not actually conform with the existing pattern of variation at any time. Thus in a surplus area the prices are not likely to fall below the terminal market price less freight and in deficit areas they will not rise above terminal market price plus freight, because in either event it would become profitable to ship to or from the terminal market. However, there may be many conditions which would cause variation within these limits, such as the availability of advantageous freight rates for direct shipment from a surplus to a deficit area without passing through recognized terminal markets. For some commodities, such as wheat, there may also be "milling-in-transit" freight rates which combine the cost of shipping the wheat to the flour mill and the flour to its ultimate destination into a single charge, thereby permitting a further narrowing of the differential between the terminal market price of wheat and the amount received by the grower.² A somewhat similar situation applies through "storage-in-transit" rates for such products as potatoes which make it possible to store the product en route from farm to market without any equivalent increase in the cost of shipping.

Another important influence upon the geographic price structure of agricultural commodities is the manner in which they are marketed. They can either be sold by the farmer or local dealer on an f. o. b. basis at the point of shipment, or they can be sent directly to the terminal market on a consignment basis. The latter practice is common in the case of fresh fruits and vegetables and for the former the price to be paid at the market is determined at organized auctions. Under such circumstances the grower or local dealer does not know what his net return will be until after the auction has been held. In extreme cases, it is even possible that the price received at destination will not be sufficient to cover the full cost of shipment. Even on sales which are nominally on an f. o. b. basis, guarantees against price declines during transit may be required, which result in a condition not materially different from that for consignment transactions.

The manner in which these general considerations affect the market for 10 important agricultural commodities—wheat, corn, oats, cotton, potatoes, hogs, wool, butter fat, eggs, and chickens—is revealed in an analysis prepared by the Department of Agriculture.³ The way in which prices grade down in surplus producing areas and up in deficit

² See p. 289 below.

³ U. S. Department of Agriculture, *Regional Variations in Prices Received by Farmers, 1925-34, for Ten Selected Commodities*, May 1939.

areas is clearly illustrated in a series of 10 contour maps included in this publication, which shows the actual average prices received by farmers for these products in different regions for the period 1925-34.

The detailed characteristics of the markets for a few important products are described below.

Wheat.—The geographic price structure of wheat is largely affected by the existence of six major terminal markets; Kansas City and Omaha for hard winter wheat, St. Louis for soft red winter wheat, Minneapolis and Duluth for spring wheat and durum, and Seattle for western white winter wheat. Spot prices in each of these markets are constantly changing, partly under the influence of fluctuations in futures markets. Generally speaking, prices at grain elevators located elsewhere than at terminal markets move in direct response to terminal market prices. In major wheat producing areas, in which the crop is more than adequate to take care of any local requirements, local prices will tend to be less than terminal market prices by an amount equal to the cost of shipment and handling to the most advantageously located terminal market.⁴ In a sense this may be compared with a basing point system in reverse, with the prices at any point being the difference between the base price and the cost of shipment rather than their sum.

This situation exists, however, only in those areas where the supply of wheat for sale exceeds the demand from local mills. In regions where the mill demand exceeds the local supply, the reverse condition may occur and price be determined by adding freight to the terminal market quotation, rather than subtracting it. This is generally true, for example, on the eastern seaboard.

Some regions may be border-line in character, with the crop exceeding demand during good years and being inadequate to meet it during poor years, and prices will reflect these changes. In Colorado, for example, the price tends to fluctuate between the Kansas City price plus freight, when the crop is poor and the Kansas City price minus freight, when the crop is good.

One important modification of the structure described relates to the availability of "milling-in-transit" freight rates. A substantial amount of wheat is sold under an arrangement whereby the freight rate on wheat shipped to a flour mill and then reshipped as flour to its ultimate destination is based upon the through rate from the point of origin of the wheat to the point of destination of the flour, rather than upon the individual hauls of the wheat and of the flour. This "milling-in-transit" rate varies with the freight zone or area in which the wheat originates and the zone in which the flour terminates. Within these zones or areas the freight rate is identical; in other words it is a "blanket rate." For example, for wheat raised in the Chicago area, there may be three possible blanket rates depending upon the origin and destination; a trans-Mississippi rate, a rate for the State of Illinois, and a rate for the territory east of Illinois.

The price which the miller can pay for wheat at any elevator, therefore, depends upon the location of his flour market and may be substantially higher than the spot price at the terminal market, less

⁴ Thus, according to a study by the Federal Trade Commission, "Grain prices paid in the country to farmers under normal competitive conditions among country elevators are based primarily on the 'cash' or 'to arrive' prices at terminal markets for the same kind and grade, less freight, terminal handling charges and the country dealer's gross margin." (Federal Trade Commission, *Agricultural Income Inquiry*, 1937, pt. I, p. 328.)

straight haul freight. It would be most accurate to say that these two situations set the limits within which prices in any surplus producing area will vary. Prices will not at any time fall appreciably below the terminal market less freight, because if they did, it would become profitable to ship to the terminal market. On the other hand, millers may often be in a position to bid above this limiting quotation when they see the possibility of advantageous "in-transit" freight arrangements.

According to the Department of Agriculture, the lowest average price received by farmers for wheat during the decade 1925-34 was in the surplus producing area in eastern Wyoming. The price in this area was about 80 cents, or between 15 and 20 cents below the prices at the major midwestern terminal markets. Another low area was Idaho, in which the price of about 85 cents was some 15 cents below the Seattle level. Highest recorded average prices—\$1.30 per bushel—were in the extreme southeastern States, Georgia and Alabama, which produced little wheat and are furthest freightwise from the terminal markets.⁵

Milk.—The price of fluid milk is subject to minimum price determination by the Department of Agriculture. The United States is divided into approximately 25 marketing areas, and in each of these areas minimum prices are established by classes of milk. In general, these prices apply to delivery at the market so that the net return to the farmer will vary with his distance from the market to which he ships and with the arrangements which he can make for transportation. The difference between the price at the market and the net return to the farmer may be substantial; thus for four urban market areas the delivered cost to dealer during October 1935 averaged \$0.053 per quart, while the net return to farmer was \$0.045.⁶

Cattle.—The marketing of cattle is centered in Chicago and Kansas City and prices at these two important centers are closely related to each other because of the ability of packers to shift their purchases from one market to the other. Net return to producers in major producing areas, therefore, usually represents the difference between prices at these terminal markets and cost of shipping cattle to them.

Potatoes.—There is a wide variety of different practices observed in the sale of potatoes with regard to the burden of transportation costs. Practices vary for early and late potatoes, with the producing area, the method of financing the crop, the channel of distribution, the grade of the product, and many other factors. In some cases, sales are on a straight f. o. b. basis, in others there is a guarantee against price decline during transit, and in still others, particularly with regard to potatoes of lower grade, sales are on a consignment basis. These differences in practice are described in detail by the Federal Trade Commission in its agricultural income inquiry. A few relevant quotations from this report follow and illustrate the diversity of possible situations.

METHODS OF SALE BY GROWERS

The practices which exist in connection with the disposition by the grower of potatoes vary considerably in the several commercial producing areas under consideration. Fundamentally, these differences stem from the single question of whether or not the grower had to depend upon outside sources for a part or all

⁵ Op. cit., p. 2.

⁶ Federal Trade Commission, Agricultural Income Inquiry, 1937, Part I, p. 121.

of the capital necessary for financing the production of his crop. Where the grower receives an advance it is almost invariably accompanied by some control over the disposition of the crop. * * *

Where the grower is able to finance his crop without resort to outside agencies, he is, of course, free to dispose of it in whatever manner he chooses. The ordinary channels utilized are direct sales by the grower to truckers, to local dealers, sales in carlots to terminal market receivers or chain stores, and shipments on consignment to commission merchants.

In Florida: The Florida crop is marketed largely on an f. o. b. basis, except in the case of potatoes grading lower than U. S. No. 1, or shipments made after other commercial producing areas have begun to compete strongly with Florida potatoes in the terminal markets. In the exceptions just mentioned, shipments are usually on a consignment basis and are sold as circumstances permit. * * *

In South Carolina: * * * In the Charleston area it is estimated that about 70 percent of all sales are made on an f. o. b. basis. These f. o. b. sales carry the true characteristics of such a sale, because there is rarely any change made in the f. o. b. price after the shipment has started its movement. This practice is somewhat different from that existing in Florida where, in the case of so-called f. o. b. sales, the seller ordinarily guarantees the purchaser against a decline in price during the time the shipment is in transit. * * *

In North Carolina-Norfolk, Va.: The method of disposition by growers in this area differs radically from the customary procedure in Florida and South Carolina. In the latter areas the local dealers through whom the crop is marketed rarely purchase potatoes outright, but handle them for the account of the growers, whereas in the area now under consideration a substantial part of the crop is purchased from growers by local dealers. * * *

* * * That part of the crop not sold outright to local dealers and shippers, consisting in large part of potatoes not equal to U. S. No. 1 in grade, is generally handled by the local shipper on consignment for the grower's account. * * * The proceeds of sale, less this charge and freight and terminal handling charges, are remitted to the grower or applied on the grower's account where funds had been advanced to him. * * *

In western New York: In western New York growers finance their own operations with the exception of some loans secured through production credit associations, which place no restriction upon disposition of the crop. * * *

The prices paid to growers in this area by buyer-loaders and local dealers are based upon carlot prices in the terminal markets ordinarily supplied from this area. The terminal market delivered price is reduced by the freight charge, 8 cents per hundred pounds for the cost of the sack, 4 cents per sack to cover foreign brokerage, and from 15 to 20 cents per sack to cover other expenses and afford a profit to the dealer.

In Wisconsin and Michigan: * * * The price paid to growers in Wisconsin is based upon the Chicago delivered price less deductions to cover freight, foreign brokerage, cost of containers, and the gross margin of the dealer or market receiver. * * *

In Michigan the Chicago quotations are not the major factor influencing the price received by the grower, since quotations to growers in Michigan are generally computed on an f. o. b. Cadillac basis. The Cadillac price is directly dependent upon quotations in the terminal market for which a particular shipment is destined.

DISPOSITION BY LOCAL DEALERS

In every commercial producing area in which inquiry was made the majority of all shipments destined for terminal markets is handled by local dealer-shippers or other types of local marketing organizations. * * * The methods of sale by local dealers are quite varied. The customary methods are: (1) Sales f. o. b. shipping point; (2) Delivered sales; (3) Sales through brokers; and (4) Consignment sales.

Sales f. o. b. shipping point are transactions in which a local shipper sells potatoes loaded in cars at shipping point. Delivered sales are those in which the shipper sells potatoes delivered at a point designated by the purchaser. In sales through brokers either f. o. b. or delivered it is customary for the broker to obtain the shipper's approval of the price before closing the sale. In these sales payment is a matter between the shipper and the purchaser and with respect to which no responsibility attaches to the broker. A consignment sale is one in which potatoes are shipped to a terminal market commission agent for sale at the best price obtainable without prior approval of the price by the shipper and payment is guaranteed by the commission agent.

There are almost infinite variations of these methods of selling resulting from individual agreements between buyers and sellers. For instance, the Atlantic Commission Co. not infrequently handles potatoes on the basis of "price arrival." This term designates a shipment intended for the Great Atlantic & Pacific Tea Co., and as to which the Atlantic Commission Co. agrees that it will accept the potatoes at the average market price in the destination market on the day of arrival provided the shipment is in suitable condition. Unless otherwise specified, the price is submitted to the shipper for confirmation before the sale is completed. The Atlantic Commission Co. also uses "arrival sales." These are shipments on which the best offers obtainable on a carlot basis are submitted to the shipper for confirmation. The potatoes may be sold to the general trade or bought by the Atlantic Commission Co. On such shipments there is no liability on the part of the Atlantic Commission Co. to accept the potatoes, as is the case in "price arrival" sales.

In f. o. b. sales the shipper is paid a price agreed upon at the time sale is made, regardless of price fluctuations between the time of sale and the time of arrival at destination. In the case of f. o. b. shipments from Florida and some other southern areas it is not unusual for the shipper to guarantee the price on arrival at destination; that is, if any decline occurs in the shipping-point price before a shipment reaches its destination the price on such shipment will be reduced accordingly.

Shipments from southern areas are customarily sold on an f. o. b. basis, unless the withdrawal of large buyers from the f. o. b. market forces a resort to consignment sales or urgent competition from other early-crop areas makes it appear advisable for buyers to concentrate their purchases in terminal markets. The principal exception to this custom of selling f. o. b. results from advances made by market receivers to local dealers. These advances are made by commission merchants in terminal markets primarily to assure themselves of a supply of early potatoes in order to meet the requirements of their trade. This practice results in shipments going to a specific market regardless of the fact that prices may be more favorable in some other terminal. * * *

Dealers in Maine sell principally upon a delivered basis. This places the responsibility for the condition of the shipment at destination upon the shipper. The risk of loss from damage in transit is an important factor in shipments from Northern points during winter months.

* * * In Wisconsin and Michigan production areas some terminal market receivers maintain what might be called chain-buying agencies. * * * Here, as in Maine, the delivered sale is the most usual type of transaction between shipping-point dealers and terminal buyers. The proportion of potatoes from these areas which will grade U. S. No. 1 or better is smaller than in the early producing areas or in Maine. This results in few sales being made upon grade, and in resort to sales on a price basis subject to inspection and approval upon arrival.⁷

Fresh fruits and vegetables.—Marketing practices for fresh fruits and vegetables are also described at length by the Federal Trade Commission in its *Agriculture Income Inquiry*, 1937.⁸ In some cases growers dispose of their crops as they stand, in others they may gather them and deliver them to local dealers, in still others they retain title to them and ship them on consignment to terminal markets. In general, the net return on shipments to any particular market will vary with day-to-day changes in conditions at that market. In the case of fruits, prices at terminal markets are largely determined by the fruit auction system. In consequence the pattern of geographic price variation for fresh fruits and vegetables is in no sense systematic.

Cottonseed.—Cottonseed is usually classed as an agricultural product although its production does involve a simple stage of processing. The geographic price structure for cottonseed is much more regular and apparently subject to a substantially greater degree of control than is true for the farm products described above.

⁷ Federal Trade Commission, *Agriculture Income Inquiry*, 1937, pt. I, pp. 573-581.

⁸ Op. cit.

Prior to 1934, the geographic price structure for cottonseed was very clearly defined. The producing territory—the Cotton Belt—was divided into a number of zones whose boundaries corresponded with the jurisdictions of the millers' trade associations. Within each of these zones the mills published the prices which they were willing to pay for cottonseed f. o. b. shipping point. If a mill in one zone purchased cottonseed from a gin located in another zone, it would pay the published f. o. b. price in that zone whether this price was higher or lower than that prevailing in its home zone.

The fact that shipping point prices, rather than delivered prices, are uniform in each zone presumably reflects the competitive structure of the industry. The buyers of cottonseed—the cottonseed oil mills—are in general larger and more concentrated than are the sellers and are therefore in a position to exert a substantial influence over the prices which they pay for their raw material. The maintenance of price uniformity at the shipping point means that each mill is bidding the same price for supplies at every point and that there is no incentive for the seller to deal with one mill rather than with another. This may lessen the likelihood of prices being bid up by competition among buyers.

In a sense, this form of price equalization at the buying point is the obverse of the more common form of equalization at the selling point, but it springs from the same general motivation. Where rival sellers are well organized, the geographic price structure often reflects the desire to avoid price competition in selling, while where buyers are in a position to exercise substantial control over the market, they may wish to avoid price competition among themselves in their purchases of raw materials.

On May 31, 1934, a Federal Trade Commission complaint⁹ was issued, as a result of which mills stopped publishing bid prices. At the present time the Department of Agriculture publishes a range of carlot prices on 10-ton lots or more in those States where sales are based on a standard grading system. There is no information available as to current practices in the industry. However, according to a recent study, there is some evidence that the exchange of price information between mills continues.¹⁰

FOOD AND KINDRED PRODUCTS

In terms of value of products, the group of industries classed by the Census Bureau as Food and Kindred Products is much the largest group in the American economy. Total value of product during 1935 was almost \$10,000,000,000.¹¹

The geographic price structures of food products reflect a very wide diversity in market characteristics such as perishability, degree of processing, extent of standardization, importance of trade-marks and brand names, relative importance of freight as an item in cost, etc. Accordingly they exhibit almost every recognized pattern of variation including basing-point systems, zone systems, f. o. b. plant pricing, freight equalization, and uniform delivered prices, as well as completely unsystematic price variation between markets. In general,

⁹ Federal Trade Commission Docket No. 2190.

¹⁰ Walton Hamilton and Associates, *Prices and Price Policies*, p. 281.

¹¹ Bureau of Census, *Biennial Census of Manufactures*, 1935, p. 42.

there is some relationship between the degree of processing and the character of the geographic price structure; slightly processed commodities, such as meats, tend to vary in as irregular a fashion as agricultural products, while foods which have undergone a greater degree of fabrication and particularly those which are branded or trade-marked commonly display the more conventional types of structure usually associated with the products of industry. There are often differences in the geographic price structure for a single product, depending upon whether it is sold under a national brand, under a distributor's brand, or in bulk; advertised brands are more commonly sold on a delivered or freight allowed basis than are private brands or bulk products.

Because of the diversity of products included in the food industry, it would be impractical to discuss in detail the geographic price structure prevailing for even a reasonably representative selection of items. Instead a very limited list of commodities has been accorded separate treatment, followed by a tabular summary of the prevailing geographic price structures for a considerably wider group.

Meats.—The price of meat products in different cities of the United States seems to bear no apparent relationship to their cost of shipment from major producing centers or from central markets. This is clearly illustrated in the case of beef by the report of the Federal Trade Commission in its *Agricultural Income Inquiry*.¹² This report lists the average wholesale prices for "good beef carcass" in 51 cities, during the year November 1934 to October 1935.¹³ The weighted average price per 100 pounds for all 51 cities was \$16.28. Prices in the two large packing centers—Chicago and Kansas City—were \$17.22 and \$18.02 respectively, or materially above this average for the United States. In contrast, the value in Baltimore, which is remote from the major producing area, was only \$14.41, while in Washington it was \$15.91 and in New York, \$16.43. Prices ranged from a low of \$11.89 in Portland, Oreg., to a high of \$19.12 in New Haven, Conn., but there was no evidence of any variation which might be considered to reflect the location of supply in relation to markets.

The range of veal prices is even greater than that for beef. According to the Federal Trade Commission report,¹⁴ average wholesale prices per 100 pounds for the period November 1934 to October 1935, varied from \$8.88 in Little Rock, Ark., to \$17.93 in Washington, D. C. The weighted average for all 51 cities was \$14.75 and prices in terminal markets at Kansas City and Chicago were \$12.36 and \$14.75 per 100 pounds respectively. Again the variation did not reveal any consistent pattern in which the influence of transportation charges to and from terminal markets could be clearly traced.

Vegetable oils.—There are three zones observed in the sale of cottonseed oil: the southeastern area, which includes all southeastern States as far west as Alabama and eastern Tennessee inclusive, the Mississippi Valley area including Louisiana, Arkansas, and western Tennessee, and the southwestern area including Texas and Oklahoma. In each of these areas prices are quoted f. o. b. mill, with the prices for all mills in any given zone the same at any time. The price is usually lowest in the southwest, $\frac{1}{8}$ cent higher in the Mississippi Valley, and again

¹² Federal Trade Commission, *Agricultural Income Inquiry*, pt. I, *Principal Farm Products*, 1937.

¹³ *Ibid.*, pp. 158-159.

¹⁴ *Ibid.*, pp. 169, 170.

higher by about another $\frac{1}{8}$ cent in the Southeast. Cottonseed oil is traded on organized exchanges which largely influence the prevailing price. It is understood that the boundaries of the zones are related to the railroad freight-rate structure and that purchasers of cottonseed oil are usually unable to cross from one zone to another in their buying because this would involve their losing the advantage of the most favorable "fabrication-in-transit" rates.

The prices of soybean and other minor vegetable oils are said to be usually uniform in crushers' mills over the entire country.

Vegetable shortening.—Nationally advertised vegetable shortening is sold on a delivered basis at uniform prices anywhere in the United States. However, in the case of at least one well-known brand, there are special prices in effect in some of the Southern States, in the Mountain States, and in the western section of the Dakotas, Nebraska, and Kansas. The lower prices in effect in these zones are for the purpose of introducing the sale of this product in those areas and suggest another of the considerations which may affect geographic price structures.

Unadvertised or private brands as well as bulk shortening are sold f. o. b. shipping point with no freight allowed.

Bread.—The market for bread is largely local in that the product is rarely shipped any considerable distance from the bakery. Prices to distributors are on a delivered basis and are uniform for the same kind of customer within any given locality. However, the same bakery may sell at quite different prices in adjacent areas and it is not uncommon for the price to be lower in a town at some distance from the plant than at nearer points. For example, according to the Department of Agriculture, the Washington, D. C., plant of a large baking company sells bread in Washington at a wholesale price of 16 ounces for 8 cents, equivalent to 8 cents per pound, while the same plant sells to Fredericksburg, Va., at a price of 22 ounces for 8 cents, equivalent to 5.8 cents per pound. The same company operating from another plant sells its bread at 8 cents per pound in Norfolk, Va., and at 6.4 cents per pound across the river in Newport News.¹⁵ This sort of price variation is clearly not related in any way to transportation costs. In fact there is some evidence that the effect of this kind of geographic pricing practice on the part of this large company may be to create difficulties for smaller competitors located in the areas in which prices are arbitrarily reduced.¹⁶

Sugar.—The prices of refined sugar at any point in the United States are related to the prices of cane sugar at seaport refineries on the Atlantic, Gulf, and Pacific coasts. These ports in effect constitute multiple basing points and the base prices at each such point are usually identical. This structure reflects the fact that practically all cane sugar refining, which accounts for approximately 80 percent of all refined sugar produced in the United States, is conducted at these seaboard refineries. The uniformity of prices at all basing points may be explained by the fact that the bulk of raw sugar consumed in the United States is imported, and the costs of shipping this raw

¹⁵ Temporary National Economic Committee Press Release, T. N. E. C. 30, January 29, 1940.

¹⁶ These practices have been the subject of complaints issued by the Federal Trade Commission on the ground that they "tend to create a monopoly." See F. T. C. Docket No. 3669, dated December 17, 1938, relating to the practice in the District of Columbia and Virginia areas; and F. T. C. Docket No. 3740, dated March 20, 1939, relating to the same subject in Iowa, Minnesota, South Dakota, and Nebraska. The former case is still pending; a Cease and Desist Order was issued for the latter case on December 28, 1939.

sugar from its points of production to any of these seaports will not vary significantly. The delivered price of cane sugar at any destination is arrived at, theoretically, on this basis of "seaboard plus"; in other words it is computed by adding the cost of combined rail-water-truck shipment to the base price. Some years ago it was the custom to compute freight on an all-rail basis only, but the increasing use of water and truck transportation forced a modification of the practice.

Beet sugar, which is produced primarily at inland points in the West, is directly competitive with cane sugar and consequently shows the same general pattern of geographic variation. However, there appears to be a slight difference in popular acceptance which results in a relatively minor price differential between cane and beet sugars. Under ordinary circumstances the price of beet sugar in any market is 20 points—i. e., \$0.20 per 100 pounds—below that of cane sugar in the same market. The result of this practice is that the highest price for beet sugar occurs around Pittsburgh beyond which point it becomes unprofitable to ship it and which represents its longest haul, while its lowest price is in the region adjacent to its producing centers.

In basing point cities, the delivered price usually includes a small charge for trucking which is in some respects similar to the switching charges observed at steel basing points. For example, in New York City during April 1939 there was a charge of three points for truck deliveries involving stops at more than one store.

An indication of the approximate relative importance of freight, on shipments of various length, is afforded by the following schedule of freight extras prevailing during April 1939, at a time when the base price approximated \$.044 per pound.

	<i>Freight extras per 100 pounds</i>
Bridgeport, Conn.-----	\$0. 14
Pittsburgh, Pa.-----	0. 28
Cleveland, Ohio.-----	0. 36
Springfield, Ill.-----	0. 42½
Minneapolis, Minn.-----	0. 54

As in the case of many other commodities, adherence to the structure just described is by no means perfect. The nominal quotations are often shaded to meet competitive conditions. In addition the differential between beet sugar and cane sugar may vary from time to time, although it usually remains within the range between 10 and 20 points. Guarantees against price decline are common, and concessions of this sort affect not only current transactions but also past orders within the terms of the guarantee. Since price concessions of this kind do not affect all markets uniformly, they amount to modifications of the nominal geographic price structure.

Salt.—Salt is marketed in accordance with a complex freight equalization system which operates on a zone basis. The delivered price at any point in a zone is, in general, determined by adding freight costs to the f. o. b. price of the most advantageously located plant in that zone. Sellers located outside the zone play no part in price-making beyond the limits of their accepted territory.

Salt is produced commercially in only 12 States. Of these two, New Mexico and Nevada, produce very little salt and a third, Oklahoma,

has not until recently been sufficiently important to warrant being considered a separate producing field. The eight producing fields recognized by the industry are New York, Ohio, and West Virginia, Michigan, Louisiana, Texas, Kansas and Oklahoma, Utah, and California. "Natural marketing areas" have been established roughly corresponding to these producing regions and producers generally refrain from selling in a marketing area, other than their own, at a price lower than that of producers in the field. Within each area a system of freight equalization prevails and "freight books" are used to insure uniformity of delivered prices. Producers outside the area may compete at the same prices but they often set a limit to the amount of freight which they are willing to absorb in order to do so.

The functioning of the system is well described in a report prepared by the Division of Review of the National Recovery Administration. According to the best information available, the same general structure still prevails.

Following the organization of the Salt Producers' Association in 1914, that organization prepared and published what were known as State freight rate books for every State in the Union. These freight rate books contained the name of every known delivery point, or point of destination, in each State, together with the railroad freight rate to such delivery point from the nearest producing plant. The various producers, in calculating the delivered price of salt to such point of destination, would add to the base price the figure set forth in the State freight rate book. Thus, every producing plant became a basing point for all delivery points nearer to it than to any other plant.

The following quotation is an excerpt from a letter, written by a member of the industry to a Nebraska wholesale grocer in 1915, explaining the method of using price lists and freight rate books (which system is still in effect):

"We have sent to you Nebraska and Iowa books and scales. You will note that there are two scales—one scale No. 7, which applies on Michigan salt, the other scale No. Z-7, which applies on Kansas salt. The rate books show freight rates both from Michigan and Kansas. The method of using the books is very simple. Take the town of Weeping Willow, Nebr., for example. Reference to the rate book will show that the cheapest rate to Weeping Willow is from Kansas, and is 36 cents. To arrive at the price to Weeping Willow, use the Z-7 book and look under column 36, which will show that the price of Number 1 Jack Rabbit is \$1.21. This is the price to be charged a retail dealer. From this price you are allowed a 5-cent per barrel commission, as shown on the last page of the schedule. We insist that the wholesale grocer keep the discount for themselves and shall not in any way rebate to the customer or sell him at prices less than those shown in our schedule.

"To arrive at the price on Michigan Salt to Weeping Willow, we refer to the Michigan rate, which is 57 cents. Recently, however, it has become the practice of Michigan manufacturers to absorb the difference between Michigan and Kansas rates to the extent of 15 cents per barrel. Therefore, the Michigan price to Weeping Willow would be at the rate of 57 cents less the maximum absorption of 15 cents, which makes 42 cents, and the price of salt from Michigan to Weeping Willow is found in Column 42 of the Michigan Schedule. Thus, the price on Michigan salt is \$1.27 per barrel."

The amount of freight absorption varied considerably, depending on the need for an expanded market on the part of manufacturers in any given area, and even varied on different grades of salt. Thus, in 1932, we find one southern manufacturer issuing a price schedule containing instructions to salesmen to limit freight absorption on rock salt in Southern States to a point which would net the producer at least \$4 per ton at the plant, but permitting complete freight absorption to all points of destination on high-grade industrial salt. In sales in Kentucky, for example, the salesman is instructed to figure freight rates on the Michigan or Ohio freight rate, whichever is lower, instead of figuring the freight rate on the actual cost from Louisiana, except that on rock salt the absorption of freight was limited to a figure which would net the producer \$4 per ton.¹⁷

¹⁷ National Recovery Administration, Division of Review—Manufacturers Control of Distribution: A Study of Trade Practice Provisions in Selected National Recovery Administration Codes, by Irwin S. Moise and George B. Haddock; Work Materials No. 62, March 1936, pp. 82, 83.

The maintenance of this elaborate system may be explained partly by the relative standardization of the product¹⁸ and partly by the great importance of freight as an element in the delivered price of salt. According to the Interstate Commerce Commission,¹⁹ rail freight revenue on carload shipments of salt amounted to 46 percent of the delivered value of the product at destination during 1936. During 1933, when prices were lower, Interstate Commerce Commission data show that freight reached the high ratio of 64 percent of delivered value; in other words, almost two-thirds of the average delivered wholesale price of salt represented the cost of transportation.²⁰

The two largest producers, who are apparently the price leaders of the industry, have plants in many different producing areas and between them they are direct market factors in 44 of the 48 States.²¹ Consequently there is little incentive for these two concerns to dump their surplus product across zone boundaries. At the same time they are in a position to utilize their prestige for the purpose of maintaining the established system, and according to the National Recovery Administration report quoted:

There is some evidence to the effect that this uniformity in published prices resulted from a definite fear on the part of smaller producers of disastrous reprisals if they disturbed the prices established by the larger, more powerful producers.²²

Nevertheless the system is not always rigidly observed and there is considerable evidence of price cutting during periods of stress. It is possible that the tendency on the part of smaller producers to cut prices occasionally is related to their difficulty in competing on the basis of uniform prices with larger companies who have obtained public acceptance for their advertised brands.²³ Sometimes sporadic price cutting culminates in severe price wars during which the entire geographic structure may become little more than nominal. Such a price war occurred, for example, during the latter part of the National Recovery Administration period in 1935:

Following May 27, 1935, deviations from published prices became more and more troublesome. By August, the secret prices evidently became sufficiently serious to warrant retaliation by the price leaders in the industry. Since that time, there has developed one of the worst price wars experienced in recent years by this industry. Published prices remain practically the same as they were during the code period, but discounts and rebates ranging from 20 to 30 percent are being granted to various types of buyers.²⁴

Coffee.—Unadvertised brands of coffee are generally sold f. o. b. shipping point with no freight allowance. Nationally advertised brands, on the other hand, are often sold on a uniform delivered price basis. Thus one company charges a uniform price for store door delivery anywhere in the United States, another prepays freight to the buyer's city only, and a third prepays freight to the buyer's city but quotes different prices east and west of the Rocky Mountains.

Rice.—Rice in bulk, as well as unadvertised or private brands, is sold on a simple f. o. b. shipping-point basis with no freight allowed.

¹⁸ Trade names and brands have some effect upon this market, but not enough to support an appreciable price differential.

¹⁹ Op. cit.

²⁰ Interstate Commerce Commission, Freight Revenue and Value of Commodities Transported, 1933.

²¹ Manufacturers Control of Distribution, p. 81.

²² Ibid., p. 83.

²³ Ibid., p. 145.

²⁴ Ibid., p. 147.

In the case of nationally advertised brands, practices vary. One brand is sold at a uniform delivered price at all eastern seaports and a uniform differential above this at all other points. Another brand is sold full freight allowed, except in a group of midwestern and mountain States in which the delivered price is higher.

Other food products.—Prevailing geographic price structures for other food products are summarized below. Where the practice applies only under certain conditions, e. g., to manufacturers brands, unadvertised brands, or in bulk, the limitation is noted. When there is no such note the practice applies generally regardless of brand or packaging.

The following products are usually sold f. o. b. shipping point with no freight allowed:

- Grape juice: Nationally advertised brands and bulk only.
- Corn meal: Unadvertised brands and bulk only.
- Crackers: Unadvertised brands only.
- Wheat flour.
- Chocolate coating: Unadvertised brands and bulk.
- Cocoa: Bulk only.
- Creamery butter: Bulk purchases in certain cases only.
- Condensed milk: Bulk purchases in certain cases only.
- Processed cheese: Unadvertised brands only.
- Bulk cheese.
- Canned peaches.
- Canned pineapple.
- Dried apricots.
- Prunes.
- Raisins.
- Canned soup: Unadvertised brands only.
- Canned corn: Unadvertised and some advertised brands.
- Canned peas: Unadvertised and some advertised brands.
- Canned tomatoes.
- Vegetable shortening: Unadvertised brands and bulk only.
- Lard.
- Molasses: Bulk purchases in certain cases only.
- Black pepper: F. o. b. warehouse, New York City or port of arrival.
- Canned salmon: Advertised and unadvertised brands.
- Tea: Bulk.
- Vinegar: Bulk.

The following products are sold either at uniform delivered prices anywhere in the United States or f. o. b. shipping point, full freight allowed. The latter practice is indicated by the initials "f. a."

Ginger ale and club soda: Advertised brands, f. a. (except in Washington and Oregon where freight allowance is limited to 50 cents per 100 pounds).

Ginger ale and club soda: Unadvertised or private brands.

Grape juice: Advertised brands (f. a. to warehouse city).

Corn flakes: Advertised brands (some quoted f. a., others delivered).

Wheat cereal: Advertised brands, f. a.

Crackers: Advertised brands, f. a.

Macaroni: F. a. (on unadvertised brands freight allowance may be for carlots only).

Pretzels: Nationally advertised and bulk, f. a.

Packaged candy: Nationally advertised, f. a.

Cocoa: Nationally advertised, f. a.

Creamery butter: Bulk delivered in some cases.

Condensed milk.

Powdered milk: Nationally advertised.

Toilet soap, bar laundry soap, and soap flakes: Private brands or bulk, f. a., nationally advertised brands delivered.

Canned soup: Advertised brands, f. a.

Baked Beans: One advertised brand, f. a. Unadvertised brands, f. a. in carlots.

Canned corn and canned peas: Some advertised brands.

Canned tomato juice: Advertised brands, f. a.

Jelly: Some advertised brands, f. a. Unadvertised brands, f. a. in carlots.

Molasses: Some advertised brands, f. a., and bulk sometimes f. a.

Oleomargarine.

Peanut butter: Some advertised brands, f. a., and unadvertised brands, f. a. in carlots.

Tea: Advertised brands.

Vinegar: Some advertised brands f. a., and unadvertised brands, f. a. in carlots.

The following products are sold on a zone basis with two delivery zones, east and west of the Rocky Mountains.

Corn flakes: Unadvertised brands.

Farina: Unadvertised brands.

Oatmeal: Unadvertised brands.

Cooked wheat cereal: Unadvertised brands.

Powdered milk: Bulk.

The following products are sold on a zone delivered basis with three or four zones recognized.

Farina, oatmeal and cornmeal: Advertised brands.

Evaporated milk.

Processed cheese: Nationally advertised.

The following nationally advertised products are sold by at least one manufacturer on a delivered-price basis, using six or seven zones: Canned baked beans, jelly, molasses, peanut butter, vinegar.

Bulk corn sirup and bulk cornstarch are sold in accordance with a basing point system on carload factory shipments.

Packaged sirup in carlots is sold on a basing point system in some areas and on a zone delivered price basis in others.

Packaged starch in carlots is sold on a delivered basis with prices varying in 12 or more zones.

TEXTILES AND TEXTILE PRODUCTS

Transportation constitutes only a minor item in the price of most textiles and textile products. During 1936, according to the Interstate Commerce Commission, freight was only 2.5 percent of the value of baled cotton at its destination; for cotton cloth and cotton fabrics the ratio of freight to value was 1.8 percent.²⁶ It is logical to assume that the relative importance of freight is even less for finished apparel and for more expensive fibers such as silk, wool, and rayon.

The minor role played by freight is probably at least in part responsible for the absence of any complex forms of freight equalization or zone pricing in the markets for these products. A few products are sold on a uniform delivered basis but the general practice seems to be to quote straight f. o. b. mill or f. o. b. mill with occasional minor modifications.

Yarns.—Cotton yarns are sold on a simple f. o. b. mill system. Knitters constitute the principal market for this product because cotton weaving is almost entirely in the hands of integrated mills.

Rayon yarn is sold on a freight-allowed basis. Quotations are f. o. b. producer's plant with minimum freight allowed to destination. The term "minimum freight" simply means that the amount of freight allowance is determined by the lowest shipping rate available, regardless of the route actually used.

²⁶ Interstate Commerce Commission, op. cit.

The geographic structure for woolen yarns varies with the type of yarn. Weaving yarns are sold f. o. b. mill. Knitting yarns, however, are sold on a delivered basis in the Philadelphia, New York, Cleveland, and New England areas; for other points they are sold f. o. b. shipping point of the finished (dyed) yarn. Apparently knitting yarns are usually dyed and finished by companies other than the spinners and the practice is to quote the price f. o. b. the finishing plant.

Gray goods.—Gray goods—both cotton and rayon—are understood to be sold on a straight f. o. b. mill basis with no important modifications.

Finished cloth.—In general, cotton and wool finished cloth, as well as gray goods, is quoted on a straight f. o. b. mill basis. There are, however, certain variations. Clothiers' linings and corset cloths are usually sold on a delivered basis to New York manufacturers, who apparently constitute a major segment of the market for these products and are consequently able to exert an important influence upon their terms of purchase.²⁶ However, the price to manufacturers outside New York is f. o. b. mill. Clothiers' linings and corset cloths sold to retailers are quoted either f. o. b. mill or, if shipped from New York stocks, f. o. b. New York warehouse.

Finished rayon cloth is sold on a delivered basis to metropolitan areas where warehouses are located; in other areas it is sold f. o. b. mill or warehouse, whichever is lower.

Finished apparel.—The great bulk of finished apparel is sold on the basis of a simple f. o. b. system. This practice is followed even though there is a tendency for retail prices to the consumer to be uniform throughout the United States either because of the existence of conventional price lines or, in the case of some nationally advertised products, because of price maintenance efforts by manufacturers.

Under these circumstances it becomes necessary for the retailer—who usually purchases directly from the manufacturer—to absorb the cost of freight in his gross margin. Although this might be thought to impose a burden upon retailers who are unfavorably located with reference to their sources of supply, the actual cost of shipment is very low for most apparel and consequently the problem is not serious. During recent years, freight costs have been further reduced by the increasing use of truck delivery. In general, therefore, the f. o. b. system seems to be observed simply because the element of freight is too minor to become the subject of competitive bargaining, especially in view of the emphasis placed by the market upon nonprice factors such as style.

The prevailing f. o. b. system is subject to some modifications, a few of which are generally recognized. Thus it is common practice to allow free delivery anywhere within the city or metropolitan area in which the apparel is manufactured. Since the cost of such delivery is unlikely to be great, this is a minor concession.

In the case of a number of products, New York City retailers are apparently granted a favored position and allowed free delivery by manufacturers located anywhere in the United States. This is often true, for example, of women's dresses and men's suits and shirts. The practice probably reflects the historical development of the industries. It is only recently that women's dresses and men's suits

²⁶ The same practice was at one time followed in connection with the sale of shirtings to New York manufacturers, but it has since been abandoned.

have come to be produced in any quantity outside of New York; the production of men's shirts was for a long time concentrated exclusively in the Troy, N. Y., and New York City areas. As a result, metropolitan retailers undoubtedly became accustomed to free delivery. As mills were established in other areas, it may have been natural for these retailers to insist upon their customary prerogatives as a condition of purchase. Even at the present time the bulk of men's suits and women's dresses (except wash frocks) is produced in New York City. At the same time the great importance of this market and the bargaining power of the large department stores in the area²⁷ are probably factors in maintaining the custom.

Companies which have showrooms in more than one city may allow free delivery in any of these cities and base freight charges to other points on the rates from the nearest such free delivery point.

In addition to these generally observed practices, a few companies absorb freight more or less regularly. For example, a few wash frock manufacturers in California pay one-half of the freight charges on shipments to the East in order to compete with eastern houses, but this seems to be an exception rather than the rule. One manufacturer of flannelette garments in Michigan equalizes his freight on a New York basis. A large work clothing manufacturer allows freight on shipments exceeding a specified number of garments. An important knit goods producer, who advertises on a national scale, sells on a delivered basis.

In addition to practices of this kind, which form a part of the established policy of most members of an industry or of individual firms, a very limited amount of freight absorption may be encountered on specific transactions when the producer feels it necessary to make a minor concession in order to consummate a sale. In general, however, concessions of this kind are made in the form of an outright reduction in the price quotation.

It should be emphasized that these deviations from simple f. o. b. pricing which have been described are all exceptions from a widely observed general rule.

Binder twine.—The geographic price structure for hard fibers and their products does not usually conform with the pattern for the textile products which have been described above. For example, binder twine is sold on the basis of a system of freight equalization. Three of the largest producers in this industry are definitely known to observe this practice and presumably smaller producers follow their lead in this respect.

However, an appreciable proportion of binder twine is produced in prison shops and it is doubtful that these observe the same selling practices. In the case of the Minnesota and Wisconsin State prisons, prices are apparently f. o. b. point of production. However, these exceptions may not conflict seriously with the general use of the freight equalization system in the industry because the sale of prison-made twine is confined largely to the States in which it is produced, partly on account of restrictions imposed by other States upon imports of prison-made goods.

²⁷ Many chain stores maintain central offices in New York at which they accept delivery for distribution to their branches; this increases the pressure to favor the New York market.

The freight equalization points in use at the present time, as reported by two of the largest manufacturers, represent, in part, important producing centers and, in part, ports of entry for foreign twine. These latter points are: Baltimore, Beaumont (Tex.), Boston, Buffalo, Chicago, Corpus Christi (Tex.), Galveston, Houston, Lake Charles (La.), Los Angeles, New Orleans, New York, Norfolk, Philadelphia, Portland (Oreg.), Seattle, and San Francisco. Until 1937 equalization was largely on the basis of domestic producing centers but the practice was then extended to include the ports mentioned. The significance of import competition is increased by the fact that there is no duty upon binder twine.

The system of freight equalization which has been described is not always observed closely. There is evidence of considerable price variation on specific orders as, for example, on large-scale purchases made by groups of dealers who pool their orders.

Manila Rope.—According to a recent study, manila rope is sold by at least one manufacturer with full freight allowed to distributors; a practice equivalent to uniform delivered prices.²³

LEATHER AND ITS MAJOR PRODUCTS

Leather and leather footwear are usually sold f. o. b. tannery and factory respectively. There is apparently little tendency to deviate from uniform plant prices in either case.

Leather.—The f. o. b. tannery method of selling is adhered to closely. Such departures as do occur are usually confined to periods of very slack business. Freight absorption or equalization to meet the competition of more favorably located producers is uncommon.

The minor importance of transportation charges in the cost of the finished product is presumably the principal reason for adherence to simple f. o. b. plant tannery pricing. Freight revenue on carload shipments of leather represented only 1.3 percent of value of product at destination during 1936, according to the Interstate Commerce Commission.²⁴ In addition, there are apparently individual variations in the quality and grade of leather which lessen the importance of price comparisons and make it possible for differently located tanneries to compete in the same market despite minor variations in their shipping costs.

Leather boots and shoes.—F. o. b. factory pricing is adhered to on sales of boots and shoes even more closely than in the case of leather. The considerations which make this possible are the same in principle but are even more pronounced than in the leather market. There are no data regarding the ratio of freight revenue to delivered value on rail shipments of boots and shoes, but it seems probable that this ratio is lower than for leather because of the higher unit value of the finished product. The extensive use of trucks for shipment probably reduces freight costs considerably. In addition, differences in grade and quality of product are greater than for leather and consumer acceptance of rival lines is largely affected by the use of trade-marks and brands which lessen the importance of price considerations and make it

²³ Mund, V. A., op. cit., p. 237.

²⁴ Interstate Commerce Commission, op. cit.

generally possible to ignore transportation costs as a competitive factor. Tie-ups of long standing between manufacturers and distributors may be another factor making for simple f. o. b. plant pricing.

Leather transmission belting.—Leather transmission belting, in lots of 100 pounds or more, is sold with full freight allowed to destination, at least by some manufacturers.³⁰

TOBACCO PRODUCTS

Cigarettes and tobacco.—Cigarettes, and smoking and chewing tobacco are sold at uniform delivered prices anywhere in the United States. This practice is presumably dictated by the desire to maintain a certain degree of uniformity of retail prices to consumers, although cigarette manufacturers do not as a rule resort to such steps as price maintenance. Since distributive margins for cigarettes are not very liberal it would be difficult for distributors to absorb freight differences.

Prevailing practices are described in detail by the Federal Trade Commission in its *Agricultural Income Inquiry*:

The prices and terms quoted on cigarettes, smoking and chewing tobacco include freight delivery to the customer's railroad destination. * * * In a few cities certain manufacturers make store-door deliveries to their customers, but such instances are rare. In cities where railroads have instituted store-door deliveries the customer receives the benefit of this arrangement.

Manufacturers accept occasional collect telegraphic orders from their customers, make deliveries by express and bear the cost of the telegram and express charges. They endeavor to prevent an abuse of this method of ordering and try to hold their customers to the use of telegraph and express orders in cases actually amounting to emergencies. Some manufacturers' price lists set out in detail the arrangements or adjustments which will be made with a customer on express shipments.

Tobacco products generally and cigarettes in particular have a very rapid turnover in retail establishments. Manufacturers consider it important to keep an adequate supply of their brands in the hands of jobbers and retailers and almost as important to avoid overstocking them and thus allowing stale merchandise to reach the consumer. It is said that the use of a recently developed moisture-proof wrapping has materially lengthened the period of freshness, but it is still necessary for tobacco products to move rapidly through the channels of distribution.

These considerations, as well as delivery costs, make it important for manufacturers, particularly those whose products are distributed nationally, to use service depots near their centers of distribution. The larger manufacturers utilize the services of public warehouses, consigning merchandise to such warehouses from time to time to supply the needs of the trade in those areas. The goods are stored by the warehouse company and delivered by it on order of the manufacturer. Although more than one manufacturer may use the services of the same public warehouse, it does not appear that there are any joint arrangements among manufacturers concerning the use of such warehouses. Several manufacturers operate their own distributing warehouses on the Pacific coast, but this is a departure from the usual method.

Deliveries of goods sold to chain-store companies are usually made directly from the factory to the warehouse of the chain. Customers of this type usually receive the same terms as jobbers and they are expected to service their individual stores. In some instances manufacturers make drop shipments to individual stores of a chain. These have sometimes represented as much as 50 percent of the total sales of cigarettes to a particular chain but such instances are unusual.

Nearly all manufacturers make drop shipments of certain minimum quantities or combinations of brands directly to retailers for the accounts of jobbers. Often such shipments include free goods or special allowances to retailers and in some instances jobbers are given additional allowances. Some manufacturers will make drop shipments of quantities as low as 1,000 cigarettes, or 5 cartons. In this way it is possible for consumers to order through customers of the manu-

³⁰ Mund, V. A., op. cit., p. 233.

facturer in quantities small enough for their personal use or for division with others. Such shipments are made by the manufacturer on the order of his customer, and when they are in interstate commerce state stamp taxes are avoided. This type of merchandising does not appear to be engaged in to any substantial extent at the present time.³¹

Cigars.—Cigars are also usually sold on a uniform delivered price basis. According to the Federal Trade Commission:

Only one instance was found where a cigar manufacturer made sales f. o. b. factory and in this instance a trade discount of 12½ percent, plus the customary cash discount, was given. No additional discounts or allowances are given to direct customers of manufacturers on account of quantity purchased. Additional allowances are made to indirect customers, including customers of branch houses, in drop-shipment deals, and occasionally an extra allowance is made to the distributor for securing drop-shipment orders.³²

Snuff.—In contrast to the other tobacco products described, snuff is sold on a zone basis. There are five recognized zones in the United States, two of which include the single States of Kentucky and Virginia. However, price variation between zones is not the same for all producers. In all cases reported by the Federal Trade Commission,³³ the price in the Northeast is between 4 and 6 percent lower than in the region west of the Mississippi and north of Oklahoma. Two of the three producers charge the same price in the South as in the East, while the other quotes the higher western price in the South. Further minor differences are introduced by variations in discounts and other terms of sale.

STEEL AND STEEL PRODUCTS

The geographic pricing practices used by the steel industry were described in detail at hearings recently held by the Temporary National Economic Committee.³⁴ Consequently, only the salient features of the system will be recapitulated here.

The steel industry represents probably the best known illustration of a multiple basing point system. For each major group of products, such as structural shapes, tank plates, bars, hot rolled sheets, cold rolled sheets, galvanized sheets, etc., "base prices" are quoted at a number of basing points. Basing points are not the same for all classes of product but vary, depending partly upon the actual location of producing mills. For a specialized product such as tin plate, the number of recognized basing points will be less than for those whose production is more widely distributed, such as structural shapes or hot rolled sheets.

These "base prices" apply to orders of a specified character and quantity. The actual price "f. o. b. basing point" for any particular order can be computed from this base price by the application of a detailed schedule of extras and deductions.

The delivered price on any order at any point will then be, at least nominally, the lowest sum of any basing point price, corrected by the application of the relevant extras or deductions, and of freight from that basing point to the point of delivery. Freight rates used are

³¹ Federal Trade Commission—Agricultural Income Inquiry, 1937, pt. I, pp. 519, 520.

³² *Ibid.*, p. 522.

³³ *Ibid.*, pp. 478-479.

³⁴ See Hearings, Part 27. January 27-29, 1940

compiled in a freight book which is published by the American Iron and Steel Institute and are usually based upon all-rail rate.³⁵

For most important products, there is a tendency for base prices at various basing points used to be uniform, but there is some variation. For soft steel bars, for example, prices as of February 8, 1940, were the same at Pittsburgh, Chicago and Gary, Cleveland, Buffalo, and Birmingham. The base price at Duluth was slightly higher, while prices were also quoted f. o. b. cars at Gulf ports and Pacific ports at levels above those for all basing points. Similarly, for cold rolled sheets, the base price at Granite City was higher than at Middletown, Cleveland, Buffalo, Chicago, Youngstown, and Pittsburgh, all of the latter being uniform.³⁶ In general, the price quoted f. o. b. Gulf ports or Pacific ports approximate the base price at the nearest eastern producing center plus combined rail-water freight.

The Iron Age, which is the recognized source of price quotations for the industry, also quotes delivered prices for New York and Philadelphia. It is understood, however, that these delivered prices are nothing more than base prices plus all-rail freight.

For a few items, such as soft steel bars and hot and cold rolled sheets, there is also a delivered price quotation at Detroit. This last quotation is usually "arbitrary" in the sense that it is below the figure which would be arrived at by adding freight to the price at the nearest basing point.

Freight charges in almost all cases are based upon all-rail freight. It is, however, usually permissible for the buyer to accept delivery from the plant in trucks, but in such a case he must pay 35 percent of the published all-rail freight to destination in addition to the base price. According to testimony presented at the hearings before the Temporary National Economic Committee, this premium is added in order to discourage truck shipments because of the extra costs to producers said to be involved in making truck delivery.³⁷ In general there is no provision for making use of water shipments in order to reduce freight costs. According to representatives of the industry, the purpose of this practice is to avoid giving an advantage to cus-

³⁵ Thus, according to the testimony of Mr. Fairless, chairman of the board of the United States Steel Corporation, before the Temporary National Economic Committee:

"Mr. FAIRLESS. The American Iron and Steel Institute has a traffic committee composed of traffic managers of 10 different steel companies. This committee supervises the Institutes Freight Rate Book. There are four sections to the Institutes Rate Book, and the responsibility of keeping these sections up to date is assigned to different members of the committee.

"When corrections are necessary—and by necessary I mean when rate changes take place—these committee members have the changes made on supplementary sections or pages, sending these sections or pages to the institute for distribution to holders of the rate book. The rate book is available to anyone interested in the steel business, but peculiarly, it is not used by all the steel companies and is used by some manufacturing concerns not classed as steel companies. There is a nominal charge made for this service and the individual holders of the book pay these charges to the institute." See Temporary National Economic Committee Hearings, Part 27, morning session, January 27, 1940.

³⁶ Iron Age, February 8, 1940.

³⁷ On this point Mr. Adams, President of the United States Steel Corporation, testified to this effect before the Temporary National Economic Committee.

"Mr. ADAMS. On truck deliveries where we contract with a common carrier, the truck company, to deliver our products to destination, we charge the all-rail rate of freight. We do that because in our analysis of rail rates versus truck rates we find that there is practically no difference. There may be a difference of a few cents here or there, but generally speaking they are approximately the same. If we sell our material on a delivered-price basis, as we always do, and a buyer wants to send his truck to our mill to pick up that material, we quote the delivered price predicated upon a transportation cost which is equal to the rail rate and we deduct from that 65 percent of that rate. Our object in doing that is something that we do not attempt to conceal.

"We are attempting to discourage the use of trucks in the transportation of our products for many reasons. In the first place, our production facilities are not laid out to haul all of our products by truck, small truck loads. We couldn't possibly ship 12 to 15 millions of finished products throughout this country each year and use trucks; there is not enough space in our plants to handle trucks on that basis, so it is an attempt on our part to discourage the use of trucks in the handling of steel products. Also there is the question of the material being damaged in transit and other items of that character." (See Hearings, Part 27, afternoon session, January 26, 1940.)

tomers located on waterways as against those who could not conveniently use water shipment. According to executives of the United States Steel Corporation only 1.6 percent of the total steel tonnage actually moves by water at the all-rail freight rate.³⁸ It is possible, however, that the volume of water shipment would be larger if customers were permitted to take advantage of the resulting economies.

On shipments to customers located at a basing point, a switching charge is added which is uniform on all transfers within the basing point regardless of the actual location of the seller or the buyer.

Although the tendency of this system, insofar as it is observed, is to equalize the quotations of all sellers in each market, there will be differences in certain cases because of the availability of fabrication-in-transit rates. Through the use of these rates there is a single freight charge covering shipment from the steel mill to the fabricator and from the fabricator to the destination, and this single rate is less than the sum of the two straight-haul rates involved. As a result, a fabricator may obtain an advantage by ordering his steel from a mill located at some distance from his plant, rather than from one nearby, because the low through rate permits him to save a substantial portion of the cost of shipping the fabricated product to the job. Some of the consequences of the availability of this privilege were suggested by Dr. De Chazeau, associate professor of economics at the University of Virginia, testifying before the Committee:

Incoming waybills (i. e., waybills on the shipment from mill to fabricating plant) may be accumulated by the fabricating plant and used on outgoing shipments of equal tonnage which permit the greatest saving to the fabricator. So long as foreign mills are willing to quote him, therefore, it is profitable for the fabricator to purchase his steel from the foreign rather than from the home mill. For example, through the application of incoming way-bills on shipments to particular areas, the fabricator may save up to five or six dollars a ton. Obviously the saving depends entirely on the destination, on the freight rate structure, and on the source of supply; but the advantage (for purposes of f-i-t) in buying from a contiguous mill is very small.

The price to the fabricator at his plant is the same from both mills. But if he is at Neville Island, say (within the switching limits of Pittsburgh), and he buys from a Pittsburgh plant, there is no advantage in f-i-t. The maximum difference between the through rate from the Pittsburgh mill to destination of the fabricated material and the sum of the two local rates is not more than a few cents. However, if he can get his steel from Chicago in shipments to certain destinations the difference will be substantial and effects a reduction in the cost of steel to him at ultimate destination. The saving varies up to about five or six dollars a ton. I don't assume that is the average; the average is likely to be considerably less. Thus, if the home mill is to retain its business, it must cut the price to compensate the fabricator for foregoing his f-i-t privilege.³⁹

It was stressed at the hearings before the Temporary National Economic Committee that the price structure for steel is not always rigidly adhered to and that concessions are granted from time to time as market conditions warrant. During the summer of 1939, for example, according to this testimony, discounts amounted to from \$6 to \$8 per ton. The effect of these concessions as a factor modifying the normal geographic structure depends upon whether they are uniformly extended to all buyers, wherever located, or whether the actual cost of shipment is a factor in determining the willingness of the seller to reduce his prices on particular orders.

³⁸ Ibid.

³⁹ See Hearings, Part 27, morning session, January 26, 1940.

Other iron and steel products.—Lake Superior iron ore is usually quoted "delivered lake ports." Imported ores are usually priced c. i. f. seaboard.

Some light steel products, such as bolts, nuts, and rivets, are sold on a freight-equalized basis. The price is f. o. b. seller's works, freight equalized with Cleveland, Pittsburgh, Chicago, or Birmingham. This system differs from a true basing-point system in that the price at the seller's works will never be higher than that at points remote from the seller's works.

Ferro-alloys.—The practice with regard to ferro-alloys varies. Ferromanganese is quoted f. o. b. Atlantic and Gulf ports (New York, Philadelphia, Baltimore, Mobile, and New Orleans). Bessemer ferro-silicon and silvery iron are sold on a basing-point system, f. o. b. Jackson (Ohio) or Buffalo (N. Y.). Electric ferrosilicon, ferrochrome, silico manganese, and many other alloys are priced on a uniform delivered basis.

Hardware, tools, and other light fabricated steel.—Such products as cap and set screws, screw products, stove bolts, tire chains, machine knives, furniture tacks, and steel pulleys are generally sold f. o. b. plant with full freight allowed to destination. Usually some limitation regarding the size of shipment and sometimes the amount of the allowance is specified; for example, for cap and set screws and stove bolts the allowance is not to exceed 65 cents per 100 pounds on orders of 200 pounds or more. For some items, such as sash pulleys and saws, freight is allowed within given zones. For pliers, wrenches, screw drivers, and many other small tools, freight is allowed to distributors or to distributing points.⁴⁰

LUMBER AND ITS PRODUCTS

Although conventional forms of geographic pricing practices have been developed in the market for most lumber products, the very large number of competing mills, the multiplicity of grades and sizes, and competition between different varieties precludes their rigid observance. Consequently the types of geographic price structure described below should not be interpreted as constituting more than the usual or prevailing practice.

Lumber—Douglas fir.—The general practice is to quote prices either f. o. b. mill or f. o. b. destination and to equalize delivered prices in an unsystematic manner in order to meet competition. However, individual mills may choose not to sell in territories in which excessive freight absorption is required. For example, one west-coast manufacturer does not compete within the territory between the Mississippi River and the Rocky Mountains because of the existence of more favorably located mills on the eastern slope of the Rockies. He will, however, ship to the east coast by boat because of the low water freight rates prevailing. In general, mills located on the West Coast are more favorably situated with regard to the east-coast market than are mills farther inland.

Lumber—Ponderosa pine.—The geographic price structure for Ponderosa pine is generally the same as that for Douglas fir except that

⁴⁰ These statements are based partly upon information, contained in the *Iron Age*, and partly upon data compiled by Mund (op. cit. pp. 233-237). While these practices are reported by some manufacturers, there is no evidence to indicate whether their observance is universal.

the source of this lumber extends farther east and south than does that for Douglas fir.

Lumber—Southern pine.—Southern pine is quoted on what approximates a multiple basing-point system, with bases at Norfolk (Va.), Hattiesburg (Miss.), and the Raleigh mountain district of North Carolina. This system is observed more commonly by large mills than by small; the latter adjust their prices in most markets to meet competition. In areas adjacent to Atlantic ports, such as Baltimore, southern pine comes into direct competition with western softwood shipped by water. Prices will usually be modified accordingly to meet this competition.

Maple flooring.—Maple flooring is sold on a single basing-point system. Prices are quoted f. o. b. Cadillac, Mich.

Oak flooring.—Oak flooring is sold on a multiple basing point system, with bases at Johnson City and Memphis (Tenn.) and Alexandria (La.). Prices are quoted f. o. b. destination and include full freight from the basing point most favorably situated. The computed freight is rounded at 50-cent intervals; thus a mill quotation of \$65 per thousand board feet in carlots plus a freight charge of \$7.80 would be quoted f. o. b. destination at \$73 per thousand board feet.

Philippine mahogany.—Although Philippine mahogany is not a true mahogany, it is directly competitive with Honduran, African, and Cuban mahogany for most purposes. It is sold on a single basing-point system, f. o. b. San Francisco, Calif.

Mahogany—Honduran, African, and Cuban.—These varieties of true mahogany are sold at delivered prices which are, at least nominally, uniform throughout the United States. However, it is understood that prices may be varied to meet the competition of other hardwoods and particularly of Philippine mahogany.

Doors—Douglas fir and Ponderosa pine.—A zone-price structure is observed in the sale of doors and prices are quoted f. o. b. destination. One manufacturer lists 21 zones in which he competes, but the prices in 2 or more zones may be the same. The method of price quotation for this product is a varying discount off a nominal fixed list price.

Windows and window frames.—Windows and window frames are also quoted by varying discounts from a nominal list price. Plants are small and more widely distributed than for doors. The sales territory of individual plants is usually circumscribed and sales are made at uniform delivered prices anywhere in this territory.

Wooden boxes.—Wooden boxes are usually quoted either delivered to destination or f. o. b. plant with a maximum freight allowance. Of three quotations reported to the Bureau of Labor Statistics, two are on the former basis and one on the latter.

Wooden caskets and coffins.—Wooden caskets are also usually quoted either delivered to destination or f. o. b. plant with a maximum freight allowance.

Axe handles.—Axe handles are quoted on a delivered basis east of the Rocky Mountains and on a basis of a maximum freight allowance west of the Rocky Mountains.

Ladders.—Quotations are usually f. o. b. factory with freight allowances limited either as to territory or amount. In some cases freight will be allowed only on shipments exceeding a specified weight, such as 100 pounds or 200 pounds. Several manufacturers allow only the carload rates on l. c. l. shipments.

Plywood.—Quotations for plywood in the Engineering News Record indicate the existence of a single basing point at Seattle, Wash. A series of rail-freight increments for various points in the country is published together with this base quotation. However, the buyer may take advantage of water shipment to reduce the delivered price in case he is located at or near a seaboard.

Summary.—The prevailing geographic price structures for these products are summarized below.

Lumber—Douglas fir: Unsystematic freight equalization.

Lumber—Ponderosa pine: Unsystematic freight equalization.

Lumber—southern pine: Multiple basing point, subject to equalization for competing varieties.

Maple flooring: Single basing point.

Oak flooring: Multiple basing point.

Philippine mahogany: Single basing point.

Mahogany-Honduran, African, Cuban: Uniform delivered prices.

Doors—Douglas fir and Ponderosa pine: Zone delivered prices.

Windows and window frames: Uniform delivered prices, area of shipment limited.

Wooden boxes: Uniform delivered prices or limited freight allowance.

Wooden caskets and coffins: Uniform delivered prices or limited freight allowance.

Axe handles: Uniform delivered prices or limited freight allowance.

Ladders: Limited freight allowance.

Plywood: Single basing point.

TURPENTINE

Turpentine is usually sold on a delivered basis but the price is said to include full freight from plant in each instance. Sellers will quote f. o. b. plant prices but this will involve no difference in the net price delivered.

The ability of turpentine producers to maintain uniform plant realizations for a standard product of this character may be explained by the high concentration of the producing area. Of a total value of product for 1935 of \$19,000,000, \$10,000,000 was produced in Georgia and \$18,000,000 in the 3 States, Georgia, Florida, and Alabama. Consequently, freight differentials between rival producers are unlikely to be important.

BUILDING MATERIALS OTHER THAN STEEL AND LUMBER PRODUCTS

Although building materials cover a very wide range of commodities, they have many market characteristics in common. The most important of these, from the point of view of geographic price structures, is their relatively low price per unit of weight, with the result that transportation charges in most cases form a very appreciable part of their delivered price. For some items in this group, in fact, transportation costs are so great that they cannot be shipped over long distances; brick, sand, and gravel, for example, have distinctly local markets. Moreover, since they are usually sold not to the ultimate consumer but to building contractors, the significance of brand names as a factor directing competition into nonprice channels is usually limited. In addition, there is possible a substantial degree of substitution of one material for another; thus lumber, steel, and reinforced concrete may all be used for similar purposes. Consequently comparisons of delivered prices play an important role in competition.

This has been reflected in the case of most building materials in the development of more or less elaborate systems for equalizing freight.

The following discussion is concerned with building materials other than steel and lumber which, because of their major economic importance, have been accorded separate treatment.

Lime.—Lime is sold at delivered prices which are determined on the basis of a system of freight equalization. The price at any locality is the lowest sum of any applicable plant price plus freight from that plant. Plant prices and freight rate schedules are both published, so that it is possible for each seller to quote the same delivered price in any market in which he chooses to compete. In general, sales will not be made when the amount of freight absorption required is considered excessive. According to members of the industry, price cutting below the accepted level is approved only in "cases of emergency." Such an "emergency" is described, for example, as a situation in which a carload of lime is misdirected through an error in the traffic department, with the result that a lower price must be accepted in order to avoid the necessity of paying freight or storage.

The following table indicates the extent of variation of the delivered prices of hydrated lime in the major geographic regions of the United States, as reported to the Bureau of Labor Statistics. For each region the highest and lowest prices recorded are shown.

Lime (hydrated, Mason's)—Variations in delivered prices for selected destinations within major geographic regions

Region	Price per ton		Region	Price per ton	
	High	Low		High	Low
New England.....	\$11.69	\$10.81	South Atlantic.....	\$14.89	\$8.00
Middle Atlantic.....	9.70	9.55	East South Central.....	13.40	10.35
East North Central.....	10.50	9.60	West South Central.....	13.80	11.80
West North Central.....	13.30	11.30	Mountain and Pacific.....	19.70	15.50

Cement.—Cement is sold in accordance with a multiple basing point system. The delivered price is determined in each instance by the usual method of taking the lowest sum of any applicable base price plus freight.

The system as it now exists represents a gradual evolution from a single basing point in the Lehigh Valley, which was once thought to constitute the only acceptable source of raw material. As new plants were established in other areas, there was a tendency for additional basing points to be added, though the process of readjustment often involved severe price wars. At the present time a fairly large number of territories has become recognized, each of which is permitted to determine its own basing point structure; mills from outside of this area do not usually cut under this price structure when they ship into it.

The basing point structure is modified by the existence of a few arbitrary points, such as New York City, in which the delivered price is adjusted to meet the competition of imports and is not directly related to the price prevailing at the nearest basing point.

Variations in delivered prices are shown below.

Cement (portland)—Variation in delivered prices for selected destinations within major geographic regions

Region	Price per barrel (in cloth)		Region	Price per barrel (in cloth)	
	High	Low		High	Low
New England and Middle Atlantic.....	\$2.25	\$1.72	South Atlantic.....	\$2.36	\$1.81
East North Central.....	1.94	1.55	South Central.....	2.35	1.76
West North Central.....	2.16	1.81	Mountain.....	2.93	1.40
			Pacific.....	2.40	1.40

Brick.—Brick manufacture and distribution is purely local, except for certain very high grade face brick, because the high cost of transportation precludes shipping the product over any considerable distance. It is usually sold on the basis of delivery to the job, with prices uniform within any locality.

Sand and gravel.—Geographic pricing practice is the same as for brick.

Building tile.—Building tile is also largely a local item, though the radius of its distribution is somewhat greater than for brick. It, too, is usually sold delivered to the job, with prices uniform within each locality.

Floor tile.—Floor tile is sold on a freight-equalized basis with each seller equalizing freight with his most advantageously located competitor. However, full freight equalization is applied only to certain products such as the standard 1 inch wide hexagon tile; for other items the amount of freight which a manufacturer will absorb is limited.

Sewer pipe.—Sewer pipe is also sold on a freight equalization basis. The method of quotation is f. o. b. destination in carlots and the element of equalization is introduced in calculating this destination price.

Gypsum plaster.—The geographic price structure for gypsum plaster is very similar to that for lime. F. o. b. prices vary from plant to plant, even for the same company, and the delivered price at any point is the lowest sum of plant price plus freight. In some large metropolitan markets, such as New York City, prices are quoted "flat"; that is, on a delivered basis. Control in this industry is highly concentrated and the leading producer is in a position to determine and police the price structure very effectively. The extent of variation in delivered prices in important cities in each major geographic region is shown below.

Gypsum plaster (Neat)—Variation in delivered prices for selected destinations within major geographic regions

Region	Price per ton		Region	Price per ton	
	High	Low		High	Low
New England.....	\$12.20	\$9.50	East South Central.....	\$16.80	\$14.20
Middle Atlantic.....	9.50	8.50	West South Central.....	17.40	14.40
East North Central.....	13.80	11.50	Mountain.....	17.40	12.50
West North Central.....	17.00	13.00	Pacific.....	17.00	13.40
South Atlantic.....	15.00	9.75			

Insulation board.—Insulation board is sold on a zone-price system, with most of the large companies delivering in three or four zones. Prices are quoted f. o. b. shipping point with full freight allowed to destination. On straight carlot and half carlot shipments, delivery is made to customers on private rail siding or to the freight station or public team track nearest destination or, in the case of water transportation, to the steamship dock nearest destination. No allowance is made for trucking from these points to the buyer's warehouse. On l. c. l. shipments, if delivery is made by truck to the customer's regularly established warehouse, trucking charges are allowed to point of delivery; on rail shipments the allowance is to the nearest rail destination. In no instance is delivery made to a specific job site. Although the customer can apparently select his own method of delivery, he cannot profit by using cheaper methods of transportation such as water carrier, because the freight allowance will be reduced correspondingly and the delivered price remains the same.

Prepared roofing.—The geographic price structure for prepared roofing is quite complex. Most companies publish detailed price lists for the various products and include a detailed description of their terms of delivery.

Prices are quoted on an f. o. b. shipping point basis. For certain defined areas surrounding a manufacturer's factories and warehouses, full freight is allowed. Beyond these "factory point" zones, freight will be equalized to the nearest published competitive shipping point. Freight in each instance is paid by the buyer who deducts the amount of the applicable freight allowance in paying the seller. Quotations include provision for adjusting prices in case a price decline is announced during transit.

Not all companies equalize fully, nor on all products. For example, several manufacturers limit their freight absorption to not more than 30 cents per hundred pounds. East of the Rocky Mountains the dealer plant price is usually the same for each plant operated by a company. In the West, however, prices are higher and vary between plants.

The extent of price variation for certain roofing products for the major geographic zones in the United States is shown below.

Prepared roofing (asphalt strip shingles, 12 inches, 210 pounds per square)—variation in delivered prices for selected destinations within major geographic regions

Region	Price per square		Region	Price per square	
	High	Low		High	Low
New England.....	\$4.56	\$4.25	East South Central.....	\$4.76	\$4.24
Middle Atlantic.....	4.29	4.25	West South Central.....	5.05	4.53
East North Central.....	4.39	4.25	Mountain.....	5.93	5.03
West North Central.....	4.71	4.25	Pacific.....	4.66	4.14
South Atlantic.....	5.03	4.25			

Heating boilers and radiation.—Geographic pricing structure for these products varies for different States. Throughout most of the Northeast a uniform delivered price prevails; quotations are f. o. b. manufacturing or assembling plants, with full freight allowed to railroad points at destination.

Throughout most of the rest of the United States prices will be equalized with competitive points of manufacture or distribution. Where competing plants are not a factor freight not to exceed 30 cents per hundred pounds is in any event allowed on shipments f. o. b. manufacturing points, but no freight allowance is granted under such circumstances from assembling points.

No freight allowance is made on shipments of less than 100 pounds.

Plumbing fixtures, closets, lavatories, sinks, and bathtubs.—Three leading manufacturers in this industry sell in carlots at uniform prices throughout the United States; that is, full freight is allowed to every wholesaler. However a plumbing contractor who is located outside a recognized "jobbing center" must pay freight on shipments from the wholesaler.

Paint materials—linseed oil.—Linseed oil is marketed on a zone price system with each seller maintaining uniform delivered prices within each zone. Zone 1, comprising the North Central States including Minnesota, is generally the base zone from which differentials to other zones are calculated. The position of this zone may be explained by the fact that Minnesota is the largest linseed oil producing State. Delivered prices in other zones rise progressively with the smallest advances in the East and Northeastern States, and the largest advance in the Pacific and Mountain States. Neither base prices nor zone differentials are the same for all sellers. The maximum differential between the base zone and zone 8 (the area last described) is 0.6 cents per pound.

Paint materials—white lead.—The largest companies sell through retail dealers on a consignment basis, thus exercising direct control over retail prices. Prices vary on a zone basis. Areas nearest warehouse or manufacturing points are "freight free" and this is called the "par zone." Beyond this area, freight charges are added in small increments; thus there is a one-fourth-cent zone, a one-half-cent zone, etc. It is understood that much of the white lead sold is marketed in the "par zone."

Prepared paints.—There is no uniformity of geographic pricing practice in the sale of prepared paints. This may be partly due to the fact that there are material quality differences between the product of rival producers with resultant emphasis upon nonprice competition.

Several of the larger paint manufacturers who distribute on a national basis use a 4-zone system. Zone 1, comprising most of the Northeast, is the base zone; prices in zone 2 range from 4 cents to 6 cents higher, in zone 3 from 8 cents to 12 cents higher, and in zone 4 from 13 cents to 18 cents higher. In each zone full freight is allowed to every jobbing center, and transportation costs from these jobbing centers must be paid by the purchaser.

The usual practice of medium-sized producers, operating on a regional basis, is to quote f. o. b. destination prices or f. o. b. plant prices with full freight allowed or prepaid. In some cases, however, freight will not be allowed on shipments of less than a hundred pounds.

Some small plants with limited sales areas quote a straight f. o. b. plant price and make no attempt to equalize delivered costs.

Of 29 companies from which data were obtained, 7 operate on the multiple-zone basis with freight allowed to job or warehouse points

in each zone; 17 quote an f. o. b. price with full freight allowed to every jobbing destination, and 5 quote straight f. o. b. plant.

Window glass.—Window glass is sold on a full freight equalization basis. The basis of quotation is a discount from a published list price. The latter is purely nominal and changes rarely, modifications in price being made by altering discounts. Thus the nominal list price was unchanged from 1913 to 1938. There are two list prices in effect in the United States, one applying to the territory east of the Rockies and the other to the west coast. It is said that the west coast differential reflects the pressure of foreign competition in that area.

Summary.—The prevailing geographic price structure for the building materials which have been described are summarized below:

Lime.—Full freight equalization.

Cement.—Multiple basing points.

Brick.—Purely local, with uniform prices, delivered to job.

Sand and gravel.—Local, with uniform prices, delivered to job.

Building tile.—Local, with uniform prices, delivered to job, but slightly greater radius than brick.

Floor tile.—Limited freight equalization.

Sewer pipe.—Limited freight equalization.

Gypsum plaster.—Full freight equalization.

Insulation board.—Uniform delivered price, nation-wide.

Prepared roofing.—Limited freight equalization from published shipping points.

Heating boilers and radiation.—F. o. b. plant, limited freight allowance.

Plumbing fixtures.—Full freight allowance, uniform delivered prices, anywhere in the United States.

Linseed oil.—Zone system, with uniform delivered prices in each zone.

White lead.—Uniform delivered zone prices, on consignment.

Prepared paints.—1. Companies selling on national scale: Uniform delivered zone prices. 2. Companies operating in limited region: Full freight allowed. 3. Small plants: F. o. b. plant.

Window glass.—Full freight equalization.

FURNITURE INDUSTRY

There are two major divisions of the furniture industry—household furniture, and office furniture and fixtures. In 1935, according to the Census of Manufactures, the total value of household furniture produced was \$336,000,000, of which \$301,000,000 was made of wood, \$32,000,000 of metal, and \$3,000,000 of fiber, reed, etc. Office furniture and fixtures were considerably less important; their total value was \$72,000,000, of which \$45,000,000 was wood and fiber, and \$27,000,000 metal.⁴¹ Household furniture is usually sold on a straight f. o. b. factory basis, while business furniture is quoted on a zone basis.

Household furniture.—Household furniture is sold on an f. o. b. factory basis with virtually no freight allowance or equalization. The principal exceptions follow:

(1) Prices for furniture are usually "crated" prices. Sometimes, however, furniture is shipped by private or contract carrier "un-

⁴¹ Bureau of Census, Biennial Census of Manufactures, 1935, p. 456.

crated." In the latter case, the manufacturer frequently assumes the cost of shipping up to 50 or 100 miles "in lieu of crating."

(2) In some cases the buyer may not wish to assume title until furniture is set up. In such cases sales may be on a contract basis and the price quoted will be a delivered and set-up price.

This difference applies only to the form of quotation, however, and the delivered price is arrived at by adding shipping and handling costs to the plant price.

(3) Certain minor geographic and product subdivisions of the industry apparently sell their products on the basis of systematic delivered pricing practices, involving freight absorption. Some of the largest furniture producers on the west coast quote uniform delivered prices to all retailers throughout their trading area. Cedar chests, a specialized item, the bulk of which is produced by four large mills located in different sections of the East, are sold freight equalized.

(4) There is occasional sporadic unsystematic freight absorption to meet special competitive conditions or in order to make a desired sale.

The general observance of uniform plant prices occurs despite the fact that freight is by no means a negligible element. According to Interstate Commerce Commission figures,⁴² the ratio of freight revenue to value at destination on carload shipments of furniture, other than metal, during 1936 was 10.6 percent. For metal furniture this ratio was 6.8 percent. Presumably the ability to maintain uniform plant prices reflects the fact that the product is highly differentiated so that competition is largely on a nonprice basis.

Business furniture.—Business furniture is generally sold on a basis of three uniform delivered price zones; the East, the Midwest, and the far West. In general, prices in the far western and middle western zones are about 20 percent and 10 percent, respectively, higher than in the eastern zone.

These relationships may be partly explained by the fact that all manufacturers doing business on a national scale are located in the eastern zone which, moreover, accounts for about 70 percent of total consumption. Presumably, smaller manufacturers located in the Midwest and West and doing business on a regional or local basis find it expedient to conform generally with the prices set by their larger rivals. The difference in structure between office and household furniture may reflect to some extent the fact that the former is a more standardized product, in the sale of which, therefore, price is a major market factor.

CHEMICALS

The chemical industry includes an extremely wide variety of products sold under many conditions and to many different kinds of buyers. Competition differs widely in form and in intensity for different products and in different markets. Thus the price structures of some chemicals must be adjusted to meet the competition of imports; in the case of others, substitute products offer a serious problem. For many items production is concentrated in a narrow geographic area, for others it is widely scattered.

⁴² Op. cit., p. 11.

Under such circumstances, it is only natural that the geographic price structures encountered should show a similar diversity. Differences in practice appear not only between products but extend also to the sales of the same products under different forms or different conditions. One practice may be followed in one section of the country and a totally different one in another. The size of the shipment is important; thus there are variations as between carload and l. c. l. lots. Differences may be introduced by the method of packaging, as between products sold in bulk, tank cars, drums, cylinders, and other kinds of containers. For example, the distribution of a product in cylinders involves problems distinct from those encountered in its shipment in drums or carboys, since transportation costs are much higher and the problem of returning the cylinder and often of servicing is added.

There is, moreover, a major distinction between spot and contract markets. The bulk of heavy chemicals, such as sulfuric acid and soda ash—90 percent or more in the case of many important products—moves on the basis of contract agreements. According to some members of the industry, however, both price and geographic structure is the same for many products for contract and for spot sales, the only important difference being that contracts guarantee the purchaser against price increases for the period specified. However contract prices are generally materially under the spot market for most chemicals.

Before describing the extent to which particular types of geographical price practice are observed, it is useful to consider briefly the pattern of variation for a few important products, in order to indicate some of the considerations which influence the choice of practice.

One product whose price structure is quite complex is carbon black, production of which is concentrated in Texas. About 95 percent of carbon black is sold in carload lots. The buyer may purchase either on a delivered basis, for which purpose the country is divided into five zones, or else he may buy f. o. b. Gulf ports. On November 13, 1939, for example, the price f. o. b. Gulf ports for delivery in North America was \$0.0275 per pound for the standard grade, packed in bags. Zone delivered prices varied from \$0.031 per pound in Texas and adjoining States (Arkansas, Colorado, Kansas, part of Missouri, and New Mexico) to \$0.0375 in the most distant zone, which includes New England, the Middle Atlantic States, Virginia, and the Carolinas. The high concentration of production in Texas apparently makes it possible to maintain this zone system with delivered prices increasing in rough approximation to the distance from the Texas area.

A totally different structure is observed in the case of l. c. l. lots. Here again the buyer has the option of purchasing on a delivered or f. o. b. basis. The f. o. b. price was \$0.0575 per pound on November 13, 1939, or substantially above the carload price. On f. o. b. sales, freight is equalized to the nearest competing plant. However, for a premium of \$0.005 per pound, that is, for a total price of \$0.0625 per pound, the product is delivered anywhere in the United States. This is equivalent to a freight equalization system for the areas immediately surrounding producing centers, and a postage-stamp system through the balance of the country.

In the case of industrial benzol, which is a basic coal tar product, the structure varies both with the quantity shipped and the type of packaging. The great bulk (probably 99 percent) of industrial benzol is shipped in tank cars. Tank car shipments east of Omaha are sold on an f. o. b. basis with full freight allowed; that is, the delivered price is uniform throughout the entire eastern part of the United States where the bulk of the product is manufactured. When the destination is Omaha or West, a basing point system is used, with prices quoted f. o. b. Minnequa, Colo., at which point an important plant is located. On November 13, 1939, the f. o. b. Minnequa price was quoted at the same level as the freight-allowed price east of Omaha.

Some industrial benzol is sold in drums, obviously a more expensive method of packaging and shipping. Under such circumstances freight is not allowed. On carload lots, however, freight is equalized to the nearest competing plant, while on l. c. l. lots there is no equalization.

In the case of these two products alone, therefore, almost every common variety of geographic structure is encountered. A simple f. o. b. system is used for l. c. l. shipments of benzol; prices are quoted f. o. b. with freight equalized for carload shipments of benzol in drums and for l. c. l. shipments of carbon black. Carload lots of carbon black are sold on a zone basis and the eastern part of the country constitutes a single zone for tank cars of benzol. A postage-stamp system applies to carbon black in l. c. l. lots except for areas adjacent to producing centers; tank cars of benzol are sold in the West on a basing-point system, while Gulf ports constitute optional basing points for carload lots of carbon black.

Because of the vast number of products involved and the complexity and diversity of practices encountered, it would be impractical to attempt to present a comprehensive analysis of price structures in the chemical industry as a whole. Instead, a limited number of important and representative products have been selected as illustrative. Information regarding the practices for these products was derived in part directly from the members of the industry and in part from the form of price quotation in the Oil, Paint and Drug Reporter.

Practically all of these products are standard in character so that it is almost imperative for each producer to meet the quotation of more advantageously located rivals in every market in which he wishes to sell. Consequently it is not surprising that for virtually every product regarding which information was obtained, some scheme for equalizing freight or otherwise meeting competitive delivered prices within each market was encountered.

Simple f. o. b. plant systems.—Simple f. o. b. plant systems with no form of freight allowance are uncommon in the chemical industry. They are encountered primarily in the case of small lots where the amount involved in the transaction is not large enough to offer the seller any incentive to absorb freight in order to dispose of his product. L. c. l. lots of benzol have been mentioned as an example. Another is cellulose acetate in quantities of less than 100 pounds, at least in the case of some producers.

This system may also be used when there are substantial quality differences between products produced in different areas, as in the case of phosphate rock, an item which will be considered under the heading of fertilizer materials.

Freight equalization systems.—The practice most commonly encountered in the limited group of products covered is simple freight

equalization to the nearest competing plant. Usually f. o. b. prices at each mill are identical or nearly so. This is the system used, for example, in the case of sulfuric acid which is sold f. o. b. works, freight equalized. Manufacturers report that the same practice is followed in the case of sodium bichromate, tribasic calcium phosphate, and aluminum sulfate. Of course, the manufacturer may simply decline to sell in territory so remote that excessive freight absorption is required.

Frequently this form of freight equalization is restricted to certain kinds of sales, usually to carload lots. This is true, for example, of soda ash, sodium hydroxide, sodium silicate, and benzol shipped in drums.

F. o. b. pricing with freight equalization to the nearest plant is also used for hydrochloric acid, anhydrous ammonia in tank cars only, sodium bicarbonate, calcium carbide, tribasic sodium phosphate and nitrocellulose. In the case of acetic acid, commercial grade, the same system is used except in States on the eastern seaboard and the Pacific coast.

Postage stamp and zone pricing.—Although freight equalization to the nearest competitive plant seems to be the practice most commonly encountered in chemical markets, many chemicals are sold on some basis which achieves uniformity of delivered prices within specified zones or, more rarely, throughout the United States. In some cases a delivered price is quoted directly, in others the quotation is f. o. b. plant but freight is allowed or prepaid by the seller.

Among products which are apparently sold on the basis of uniform delivered prices throughout the United States are cellulose acetate in quantities of 100 pounds or more, and butyl acetate in drums or tanks. For the first of these the delivered price is quoted directly, for the other two the price is f. o. b. plant with full freight allowed. Postage-stamp systems are also common in the case of coal-tar dyes, which are usually shipped in l. c. l. lots.

A practice intermediate between freight equalization and delivered price uniformity has been already described in the case of carbon black, sold in l. c. l. lots.⁴³

For most chemicals sold on a delivered price or freight allowed basis, zone systems rather than postage-stamp systems are observed. This may be due to the fact that freight constitutes a relatively important element in the price of many of these products and the major centers of production and consumption are often concentrated so that it is not considered desirable to ship to minor remote markets at the same rate as to more fortunately located users. In some cases, moreover, the existence of foreign competition makes it necessary to treat seaboard areas on a special basis.

For example, acetic acid is sold at a uniform delivered price in Atlantic Seaboard States (in contrast with the practice of freight equalization used elsewhere). Benzol in tank cars (by far the most important means of shipment) is sold freight allowed to points east of Omaha. Although for normal butyl acetate freight is allowed anywhere in the United States, secondary butyl acetate⁴⁴ is sold on this basis only east of the Mississippi River, possibly because its price per pound is lower so that freight becomes a relatively larger item. Carbon black in carload quantities is quoted on a delivered basis with prices

⁴³ It is understood that less than 5 percent of carbon black is sold in l. c. l. lots.

⁴⁴ Normal and secondary butyl acetate are different chemicals; not merely different grades of the same chemical.

varying for five zones. There are four zones for synthetic methyl alcohol. In the case of carbon tetrachloride, four zones are observed both for carload and l. c. l. quantities, but in zone 4 (Pacific and Mountain States) the price is f. o. b. cars at specified Pacific ports (Los Angeles, San Francisco, Portland, Seattle). Zone systems are also used for l. c. l. shipments only of caustic soda and soda ash. On June 7, 1940, a leading producer of flake calcium chloride started quoting prices for that chemical on the basis of a zone system, involving 10 zones and 3 subzones. This superseded a postage stamp system which had been previously observed.

The zone system for anhydrous ammonia in cylinders is in some aspects a special case. There are two sets of prices quoted for this product by a major producer. One of these is a series of State-wide delivered prices for practically every State in the Union for delivery from base points only, located in Philadelphia, St. Louis, New York, Newark, Niagara Falls, Detroit, Chicago, and Boston. In addition there are stock-point prices within various States or areas for deliveries from stock; these latter prices apply to particular cities only. There are also a number of zone systems for delivery from stock points in addition to the State-wide delivered price zones previously mentioned. The reason for this price structure is probably the fact that the use of cylinders in the distribution of the product entails very heavy transportation costs both in outgoing and incoming shipments of the cylinders. In addition a certain amount of servicing is necessary. As a result, zones for this product are smaller in size and much greater in number than for most of the other products described.

Zone differentials and changes in zone systems.—The uniformity with which zone boundaries and price differentials are maintained over a period of time is significant in interpreting the significance of zone systems. Consequently an analysis has been prepared of zone relationships since July 1936 for four chemicals; caustic soda (l. c. l.), soda ash (l. c. l.), synthetic methanol (l. c. l.) and carbon black (standard, carloads). This is presented in table 2.

It is evident that for some of these products zone relationships are more persistent than for others. Zone price differentials have remained unchanged since July 1936 for l. c. l. shipments of caustic soda and soda ash. In the case of synthetic methanol, prices and price relationship between zones were changed nationally between July 1936 and July 1937 and then remained uniform till April 1940. Prices of carbon black were drastically revised between July 1937 and July 1938 and the revision involved some change in zone differentials. In general there seems to have been no tendency to change zone boundaries as such during the period covered, but in several instances zones have been merged since 1936. Thus all Northeastern States were combined into a single zone for the caustic soda and soda ash markets between July 1936 and July 1937, while New Mexico, Texas, and Wyoming, which constituted a separate zone for methanol during 1936, were quoted on the same basis as other Mountain and Southern States by 1937. If this small group is representative there seems to be a general tendency for zone relationships in chemical markets to persist over a period of time, but modifications to meet changing conditions do occur.

Basing-point systems.—Basing-point systems as such are apparently uncommon in chemical markets. Examples already referred to are

benzol in tank carlots which is quoted f. o. b. Minnequa, Colo., for delivery at Omaha and West; carbon black which can be purchased f. o. b. Gulf ports at the buyer's option, and carbon tetrachloride which is quoted f. o. b. Pacific ports for delivery in Pacific and Mountain States.

Summary.—It is clear that the geographic price structure of the chemical industry falls into no simple pattern and that practices often show wide variation for a single product sold under somewhat different terms. For convenience in reference the geographic structures prevailing for the products discussed are summarized in table 1.

The reasons for the establishment of particular types of geographic price structure for individual products under specific conditions are difficult to trace. Undoubtedly many factors enter, including the historical development of the industry and its present competitive conditions, the relative importance of the cost of freight, etc. If any generalization is possible, it may be that simple freight equalization is most common in the case of heavy chemicals, for which transportation costs bulk importantly, while delivered or zone systems are more likely to occur where freight is a less important factor. Thus, such basic chemicals as sulfuric acid, soda ash, sodium bicarbonate, and hydrochloric acid are all sold on a freight-equalized basis, while products which cost more per pound, such as cellulose, butyl acetate, and coal-tar dyes are sold on a delivered basis. On the other hand, this is far from an invariable rule and many of the more expensive products are also sold on an f. o. b. plant, freight-equalized basis.

TABLE 1.—*Geographic price structures for selected chemicals, summarized*

Product	F. o. b. plant—No equalization	F. o. b. plant—freight equalized	Uniform delivered prices	Zone system	Basing-point system
Sulfuric acid		X			
Hydrochloric acid		X			
Soda ash		Carloads		L. c. l.	
Sodium hydroxide		Carloads		L. c. l.	
Sodium silicate		Carloads		L. c. l.	
Sodium bicarbonate		X			
Sodium phosphate (tribasic)		X			
Sodium bichromate		X			
Calcium phosphate (tribasic)		X			
Calcium carbide		X			
Calcium chloride (flake)		X			
Aluminum sulfate		X			
Anhydrous ammonia		Tank cars		Cylinders	
Acetic acid		Except seaboard States.		Seaboard States.	
Butyl acetate (normal)		Cans.			
Butyl acetate (secondary)			Drums or tanks.		
Cellulose acetate	Less than 100 pounds.		East of the Mississippi.		
Synthetic methyl alcohol			100 pounds or more.		
Carbon tetrachloride				X	
Carbon black		L. c. l. (buyer's option).	L. c. l. (buyer's option).	Except Pacific and Mountain States.	Pacific and Mountain States.
Nitrocellulose		X		Carload lots.	Carload lots (alternative).
Benzol	Drums—l. c. l.	Drums—carlots.	Tank cars (east of Omaha).		Tank cars (Omaha and West).
Coal-tar dyes			X		

TABLE 2.—Zone prices and zone differentials—Selected chemicals

CAUSTIC SODA, FLAKE, DRUMS, L. C. L., PER 100 POUNDS

Zone	Delivered prices				Differentials from zone 1			
	July 27, 1936	July 26, 1937	July 25, 1938	Nov. 13, 1939	July 27, 1936	July 26, 1937	July 25, 1938	Nov. 13, 1939
1.....	\$4.00	\$3.45	3.55	\$3.55				
1a.....	4.05				\$0.05			
2.....	4.15	3.60	3.70	3.70	.15	\$0.15	\$0.15	\$0.15
3.....	4.40	3.85	3.95	3.95	.40	.40	.40	.40
4.....	4.80	4.25	4.35	4.35	.80	.80	.80	.80
5.....	4.05				.05			

SODA ASH, DENSE, 58 PERCENT, BARRELS, L. C. L., PER 100 POUNDS

Zone	Delivered prices				Differentials from zone 1			
	July 27, 1936	July 26, 1937	July 25, 1938	Nov. 13, 1939	July 27, 1936	July 26, 1937	July 25, 1938	Nov. 13, 1939
1.....	\$2.37	\$2.25	\$2.35	\$2.25				
1a.....	2.42				\$0.05			
2.....	2.52	2.40	2.50	2.50	.15	\$0.15	\$0.15	\$0.15
3.....	2.77	2.65	2.75	2.75	.40	.40	.40	.40
4.....	3.17	3.05	3.15	3.15	.80	.80	.80	.80
5.....	2.47				.10			

ZONE LIMITS FOR CAUSTIC SODA AND SODA ASH

Zone 1.—East of Mississippi River, but including Davenport, Iowa, and St. Louis, Mo., to south boundary of Virginia and Kentucky.

Zone 1a.—New England (combined with zone 1 after 1936).

Zone 2.—Alabama, Florida, Georgia, Iowa (except Davenport), east Kansas (including Wichita), Minnesota, Mississippi, Missouri (except St. Louis), North Carolina, Omaha, South Carolina, and Tennessee.

Zone 3.—Arkansas, Kansas (west of Wichita), Louisiana, Nebraska (except Omaha), North Dakota, Oklahoma, South Dakota, Texas (except El Paso).

Zone 4.—Arizona, Colorado, El Paso, Idaho, Montana, Nevada, New Mexico, Spokane, Utah, Wyoming.

Zone 5.—California, Oregon, Washington (except Spokane).

METHANOL, SYNTHETIC, DRUMS, L. C. L., PER GALLON

Zone	Delivered prices				Differentials from zone 1			
	July 27, 1936	July 26, 1937	July 25, 1938	Nov. 13, 1939	July 27, 1936	July 26, 1937	July 25, 1938	Nov. 13, 1939
1.....	\$0.425	\$0.405	\$0.405	\$0.405				
2.....	.470	.470	.470	.470	\$0.045	\$0.065	\$0.065	\$0.065
3.....	.455	.445	.445	.445	.030	.040	.040	.040
4.....	.610	.600	.600	.600	.185	.195	.195	.195
5.....	.520				.095			

ZONE LIMITS FOR SYNTHETIC METHANOL

Zone 1.—Connecticut, Delaware, District of Columbia, Illinois, Indiana, Iowa, Kentucky, Maine, Maryland, Massachusetts, Michigan, Minnesota, Missouri, New Hampshire, New Jersey, New York, North Carolina, Ohio, Pennsylvania, Rhode Island, Tennessee, Vermont, Virginia, West Virginia, Wisconsin.

Zone 2.—Alabama, Arkansas, Colorado, Florida, Georgia, Kansas, Louisiana, Mississippi, Nebraska, North Dakota, Oklahoma, South Carolina, South Dakota; after 1936 Texas and Wyoming included.

Zone 3.—Los Angeles and San Francisco, Calif.; Portland, Oreg.; Seattle, Wash.

Zone 4.—Arizona, California (except Los Angeles and San Francisco), Montana, Nevada, Idaho, Oregon (except Portland), Utah, Washington (except Seattle); New Mexico, included after 1936.

Zone 5.—New Mexico, Texas, Wyoming for 1936 only.

TABLE 2.—*Zone prices and zone differentials—Selected chemicals—Continued*

CARBON BLACK, STANDARD. BAGS, PER POUND, C. L.

Zone	Delivered prices				Differentials from zone A			
	July 27, 1936	July 26, 1937	July 25, 1938	Nov. 13, 1939	July 27, 1936	July 26, 1937	July 25, 1938	Nov. 13, 1939
A-----	\$0.0445	\$0.0445	\$0.0275	\$0.0275				
B-----	.0475	.0475	.0310	.0310	\$0.0030	\$0.0030	\$0.0035	\$0.0035
C-----	.0505	.0505	.0335	.0335	.0060	.0060	.0060	.0060
D-----	.0490	.0490	.0325	.0325	.0045	.0045	.0050	.0050
E-----	.0505	.0505	.0341	.0341	.0060	.0060	.0066	.0066
F-----	.0535	.0535	.0375	.0375	.0090	.0090	.0100	.0100
G-----	.0530	.0455	.0300	.0300	.0085	.0010	.0025	.0025
L. c. l. f. o. b. whole-								
sale-----	.0700	.0700	.0575	.0575	.0255	.0255	.0300	.0300
L. c. l. delivered-----	.0750	.0750	.0625	.0625	.0305	.0305	.0350	.0350
Cartens l. c. l. de-								
livered-----	.0825	.0850	.0700	.0700	.0380	.0380	.0425	.0425

ZONE LIMITS FOR CARBON BLACK

Zone A.—Delivered rail (Gulf ports) for delivery in North America (water freights extra)

Zone B.—Arkansas, Colorado, Kansas, part of Missouri, New Mexico, Texas (except coasta! ports).

Zone C.—Pacific Coast States.

Zone D.—Illinois, Iowa, Wisconsin.

Zone E.—Florida, Georgia, Indiana, Kentucky, Michigan, part of New York, Ohio, part of Pennsylvania, Tennessee, West Virginia.

Zone F.—Maine, Maryland, Massachusetts, New Hampshire, New Jersey, part of New York, North Carolina, part of Pennsylvania, Rhode Island, South Carolina, Vermont, Virginia.

Zone G.—Mexico (f. o. b. border 1938-39).

Source: Oil, Paint and Drug Reporter.

DRUGS, COSMETICS, AND TOILETRIES

Most cosmetics, toiletries, and proprietary drugs are sold at uniform delivered prices throughout the United States. In some cases the price is quoted directly on a delivered basis; in others freight may be allowed or be prepaid. While this is the general practice, it is not universal, the most common variant being the provision that the seller will pay freight only on shipments of a specified minimum quantity. Thus one toothpaste manufacturer prepays freight only on lots of one gross or over, while one seller of proprietary medicines sets the minimum limit at orders of at least \$70.

This form of price structure reflects a number of characteristics common to the market for most of these products. In the first place, the cost of transportation is rarely more than an insignificant element in the price of the delivered product. In fact, for many of these items costs of promotion such as advertising so far outweigh the physical costs of manufacture and shipment that the latter can readily be ignored by the seller.

Moreover, minimum resale prices both at retail and at wholesale have been established for many of these products under the provisions of the so-called fair trade laws in the 44 States having such statutes. Prices to distributors are usually related to retail list prices by a system of discounts. Distributors are well organized and have been vigilant in protecting or expanding their sales margins. Consequently, resentment might be aroused on the part of distributors remote from the seller's plant or warehouse if they were called upon to pay freight and thereby found their margin reduced below that of more favorably located wholesalers or retailers.

In addition, many of the larger manufacturers maintain warehouses throughout the country, while some distribute to retailers through del credere agents in order to retain control over prices paid by retailers. In these circumstances the adoption of a system of uniform delivered prices has the merit of simplicity and it has become the general practice.

In the case of merchandise not bearing an advertised trade-mark, the same practice is commonly followed, although there is probably greater tendency to use f. o. b. pricing in some instances. This is particularly true in the case of standard unbranded drugs and chemicals such as cocaine, dextrose, ether, etc. These are quoted in the Druggists Circular, a standard trade periodical, on the following basis:

These prices are average prices for quantities retail druggists usually buy. They are f. o. b. New York or St. Louis, and are subject to market fluctuations. Retailers at points distantly located from market centers may expect to pay jobbers an advance over the quoted prices to cover transportation costs.

FERTILIZER AND FERTILIZER MATERIALS

The price structure of fertilizer and fertilizer materials is extremely complex, as regards both geographic differentials and other terms and conditions of sale. Some of the types of price variation are described in a report by the National Resources Committee.⁴⁵

Freight constitutes a fairly important element in price; on rail shipments in 1936 freight revenue averaged 13 percent of delivered value at destination.⁴⁶ Producing facilities, at least for mixed fertilizer, are scattered and, although more fertilizer is used in the southeastern States than anywhere else in the United States, fertilizer is sold all over the country. Since brand names are not particularly important, any differences in delivered price would yield a significant local competitive advantage. Consequently an extremely detailed structure for eliminating freight as a competitive element has developed in the industry.

Insofar as sales to farm users are involved, the basic feature of this structure is a zone system, but it is subject to many modifications, which will be described below. Some fertilizer materials, however, particularly when shipped in carload lots to fertilizer manufacturers or mixers, are quoted on an f. o. b. or basing point system.

Fertilizer materials.—Fertilizer contains three basic ingredients—nitrogen, phosphorus, and potassium. These essential elements can be supplied by a number of different chemicals, which can either be purchased by the farmer separately or in prepared mixtures suitable to the requirements of his soil and crops. However, some raw materials, such as phosphate rock, are not in form suitable for direct use and must be processed further in order to render the essential element available for the soil.

When farmers purchase fertilizer materials directly in less-than-carload quantities, the price structure is generally similar to that for mixed fertilizer, described below. On sales of these materials to fertilizer manufacturers, or to users in straight carload lots, geographic pricing practices vary with the product. Since it is impractical to

⁴⁵ National Resources Committee, *Structure of the American Economy*, pt. I, pp. 175-176.

⁴⁶ Interstate Commerce Commission, *op. cit.*

describe the geographic structure for each material in common use, a few of the more important will be presented as illustrations.

The first basic ingredient of fertilizer is nitrogen. One common source of this element is ammonium sulphate, about one-fifth of which is imported; the balance is produced in domestic ovens. Despite the relatively small proportion supplied from outside sources, the price structure apparently reveals the effect of this competition. Prices are quoted either f. o. b. Atlantic or Gulf ports, or f. o. b. cars at the nearest inland producing oven with inland prices regularly \$1 below prices at the ports. Freight is equalized so that the buyer pays the lowest combination of port or plant price and freight to destination.

An important alternative source of nitrogen is cyanamid, but the amount of cyanamid that can be used in a mixed fertilizer is limited by technical considerations. The great bulk of this product is manufactured in Niagara Falls, Ontario. Price quotations in the United States are on a uniform delivered basis. The reason for this form of quotation is uncertain, but it may be because cyanamid must always face the competition of other nitrogen carriers and the uniform price permits it to compete over a wider area than would otherwise be possible.

The primary original source of the second basic fertilizer ingredient—phosphorus—is phosphate rock. There are two major sources of this product, Tennessee and Florida. Apparently the Tennessee product is somewhat superior in purity to that in Florida, but its cost of extraction is materially greater. Consequently, the Tennessee producers make little effort to compete with the Florida pebble in most markets but confine their sales to superphosphate producers located in Tennessee. Selling to this restricted market, there is no need for freight equalization and they can operate on a straight f. o. b. basis.

The Florida pebble mines are themselves located within a fairly narrow geographical area, and most of the product is shipped north by boat. Variations in the locations of individual mines do not affect freight charges appreciably and can be ignored. As a result there seems to be no pressure for any form of freight equalization, and prices are quoted on a straight f. o. b. basis.

In order to be rendered available as plant food, the phosphate rock must be transformed into superphosphate. A large proportion of superphosphate is produced in Baltimore, and published quotations are usually f. o. b. that city. However, there are many superphosphate plants in other areas, as in Tennessee, which also quote f. o. b. their own plants with an effort to equalize freight.

The third primary element—potassium—can be supplied by muriate of potash. There are two primary domestic sources of this product, New Mexico and California. However, the price structure has been governed not by the domestic product but by foreign imports arriving at Atlantic, Gulf, and Pacific ports. Moreover, a substantial portion of the domestic product is also shipped by water, either through the Panama Canal from California or via the Gulf from New Mexico. As a result the price has been quoted c. i. f. ports plus freight to the inland destination. There are 40 ports which are recognized as basing points, and the base price at each is the same. This is true even though much domestic potash is shipped from Carlsbad, N. Mex.,

or Trona, Calif., at a freight rate entirely unrelated to the rate which determines the price structure. While this is equivalent to f. o. b. pricing for the foreign product, it has all the characteristics of a basing point system insofar as domestic potash is concerned. As a result it is estimated that buyers in the Mississippi and Ohio Valleys pay several dollars a ton more for potash under the port basing system than they would pay f. o. b. Carlsbad plus freight to destination.

This method of quoting prices for potash has recently been the subject of investigation by the Department of Justice and the Department of Commerce. During May 1940 the latter agency issued a report embodying the results of its analysis. Recommendations included the recognition of domestic producing centers as f. o. b. pricing points, and the establishment of a fixed differential between prices f. o. b. these producing points and c. i. f. port prices.⁴⁷

Mixed fertilizer.—Companies selling mixed fertilizer use two primary methods of distribution, dealers and agents. In recent years there has been a marked tendency to abandon the use of independent dealers in favor of the agency relationship, largely because the latter permits direct control over resale prices by the producer. Consequently, manufacturers are in a position to determine the delivered price structure to farmers directly. Large companies issue detailed price lists for the guidance of their agents (or dealers), which indicate precisely how transportation charges are to be treated.

For the purposes of the fertilizer market, the United States is divided into some 19 zones or districts which are, in turn, subdivided into many subzones. These subzones may themselves be split into minor divisions.

Not only the prices, but also the products offered for sale, vary between these different areas. The ingredients of mixed fertilizer must be adjusted to the type of soil and the crop, and in addition state regulations may prescribe the composition of the product which may be marketed within the state. Thus most of the mixes offered for sale in South Carolina are quite different from those offered in Ohio, though a few may be identical in both areas.

Conditions of sale vary to some extent between areas, but the basic structure is similar. In each zone or subzone there is a basic price quotation for each mix which applies to delivery at any factory or company controlled distributing warehouse, or at any railroad station or boat landing, within the designated area. A standard trucking allowance of 75 cents per ton is granted to cover hauling expenses to the farm. However, this is not equivalent in practice to a uniform delivered price within the zone because it is subject to many stated exceptions.⁴⁸

In the first place the basic quotation is for delivery at buyer's railroad station or boat landing only in carload lots, unless there is an agent's warehouse at such station or landing in which case the price applies to any quantity. Otherwise, on l. c. l. lots, the customer must pay an added amount equal to the difference between the carload and l. c. l. rates from the nearest designated distributing point.

⁴⁷ The Potash Industry, a report submitted to the Department of Justice by the Department of Commerce, prepared by Willard L. Thorp and Ernest A. Tupper, May 1, 1940.

⁴⁸ Of course the quotation is also subject to numerous terms related to factors other than geographic such as time of payment, method of packing, etc., but these do not pertain to the subject under discussion.

Moreover the customer can, if he chooses, accept delivery at a plant or company warehouse. Under such circumstances he is granted a trucking allowance which varies with the length of haul to his farm. In some areas detailed schedules indicate the exact allowance per ton based upon the actual shortest highway mileage, ranging from a minimum allowance of 75 cents up to and including 40 miles, to a maximum of \$4.70 for 400 miles. In other areas the trucking allowance is determined by the actual carload rate of freight from factory to consumer's nearest railroad delivery point. At times, various combinations of these principles are followed.

In some areas there are further modifications designed to benefit consumers who happen to be advantageously located with respect to certain ports. For example, in the South Carolina area, if the carload freight from Wilmington (N. C.), Charleston (S. C.), or Savannah (Ga.) to destination is less than \$3.50 per ton, the difference between the published freight rate from these ports and \$3.50 is deducted from the list price for the zone.

Apparently this price structure can be resolved into the following elements:

(1) On carload shipments the price is f. o. b. port until the freight rate reaches a prescribed limit, beyond which point freight is absorbed by the seller throughout the balance of the zone or district.

(2) On l. c. l. shipments the company will absorb only the carload rate and the buyer must pay the difference between that and the rate actually paid.

(3) The buyer has the option of accepting delivery at plant or warehouse, and receiving a trucking allowance which is related to the carload freight rate or to the highway mileage.

(4) In all cases a fixed discount of 75 cents is applicable as an allowance for trucking from railroad station or landing to farm. Since this allowance is apparently granted on all transactions, it does not, strictly speaking, constitute an element of the geographic structure but is equivalent to a simple standard discount off list.

In general, the price structure applicable to sales of fertilizer materials by fertilizer companies to farmers follows the same general pattern as that for mixed fertilizers. There are, however, certain exceptions on carload shipments of specified materials direct from the point of production or importer's storage warehouse. Thus nitrate of soda in some areas is quoted ex vessel at designated ports or, at the buyer's option for a small premium, f. o. b. storage warehouses at the same ports. Sulfate of ammonia and cyanamid are quoted on the same basis as that earlier described in connection with commercial sales. In other areas special terms may be made to meet competitive conditions. Thus nitrate of soda in one area is currently quoted delivered to the farm in straight carload lots.

As might be expected in connection with any structure so complex, it is subject to frequent variation to meet local competitive conditions. Either the list price or the terms of delivery may be changed as a means of inducing sales. Thus one company is at present (Spring, 1940) allowing special freight differentials for designated delivery points in south Alabama and in Florida. Regular price schedules are often supplemented by special schedules for limited periods in order to meet competition.

PAPER AND PULP INDUSTRIES

Pulp and paper are bulky items. Freight is an important factor in the delivered price. Since the product is standardized, it is not surprising that geographic price structures have become somewhat conventionalized. In general a multiple basing point system is characteristic of pulp markets and a zone system of the markets for paper.

Pulp.—The market pattern for pulp reflects the pressure of imports from Canada and Europe. Prices for most grades of pulp are quoted ex dock, ocean, or lake ports. Base prices are usually uniform at Atlantic, Gulf, and west coast ports. Quotations at lake ports are usually \$2 per ton higher than these base prices east of the Straits of Mackinac, and \$3 per ton above base prices west of the Straits of Mackinac. These differentials are approximately equal to the added cost incurred in shipping pulp through the St. Lawrence River to the Lakes.

At inland points pulp is usually sold on a delivered basis with the price computed by adding the appropriate amount of freight to the base price ex dock at the most advantageously located port. Most foreign pulp and a substantial amount of domestic pulp actually passes through the ports which serve as basing points. This includes European pulp, some pulp originating in eastern Canada, and domestic pulp from the west coast which is shipped by water to the East. Much domestic and Canadian pulp does not actually pass through these basing points, but its price follows that which applies to the bulk of the water-borne product.

While the practices described are generally characteristic of the industry, the basing-point system is not strictly adhered to by all mills on all sales. All foreign pulp (using the term "foreign" to exclude both domestic and Canadian) follows a basing-point structure, as does domestic and Canadian bleached sulfite. However, domestic and Canadian unbleached sulfite, bleached and unbleached kraft and ground wood pulp are understood to be quoted on a simple delivered-price basis.

Paper.—Most paper products are sold at delivered prices on a zone basis. In the case of a considerable number of items, however, the zone system applies to the resale of merchandise by distributors rather than to its initial sale by paper mills; prices on the latter transaction vary in an unsystematic way. The number of zones and their relationship varies for different products.

Newsprint.—There are 10 zones in the newsprint market. This number is materially larger than that for any other paper product, probably because the cost of transportation constitutes a major element in the price of newsprint. During 1936 according to the Interstate Commerce Commission,⁴⁹ freight revenue amounted to 22 percent of the delivered value of newsprint shipped by rail, in contrast with ratios of from 4 to 6 percent for printing paper, wrapping paper, and paper bags.

In the operation of the system, the fourth zone, which includes the western border of the Great Lakes, is the base zone and prices in other areas are computed by means of more or less fixed differentials. The lowest prices are not quoted in the base zones but in zones 1 and 10,

⁴⁹ Interstate Commerce Commission, op. cit.

the former of which includes metropolitan New York and the latter the Pacific coast and the southern tip of Florida. The bulk of newsprint consumption occurs within territory in which the price is either the base price or less.⁵⁰

Although the zone system is generally observed, departures are apparently not infrequent. These may occur either through direct price reductions or by ignoring zone boundaries on particular sales. It is understood that price cutting of this kind is most frequent in the case of mills selling newsprint in their immediate vicinity. Zone boundaries themselves are also subject to some change from time to time in adjustment to changing competitive conditions.

Wrapping paper, tissue paper, and paper towels.—Price quotations for wrapping paper, tissue paper; and paper towels are all apparently on a zone basis. In the case of wrapping paper the price is f. o. b. plant, freight allowed; for the other two items the quotation is on a delivered basis. Information is not available regarding the number of zones observed in the case of wrapping paper. Current quotations for unbleached roll toilet tissue and paper towels, both bleached and unbleached, are sold on the basis of three zones. Zone differentials vary for different items and there seems to be no regular relationship between the prices in different zones. For example, cases of 1,000-sheet rolls of toilet tissue were quoted at \$3.50 in zone 1, \$3.65 in zone 2, and \$3.75 in zone 3, while for 650-sheet rolls the lowest quotation was for zone 3 at \$2.85 a case, Zone 1 was next at \$3.10 a case and zone 2 at \$3.20 a case.⁵¹

Paper board.—There are two main price zones observed in paper board markets, the eastern and the central. The eastern territory extends to the Alleghany Mountains and the central territory includes most of the Middle West. In addition to these two main zones there are a number of other zones of minor importance. Thus there is a small zone in the Southeast in which prices are usually at the same level as in the eastern zone. There is also a small zone on the west coast but the product is apparently not marketed to any appreciable extent in that area. The minor importance of these zones is suggested by the fact that official reporting journals⁵² do not quote prices for them. For most types of paperboard, prices in the central territory are somewhat higher than in the eastern, but the differential varies from time to time and is not the same for all products. In some cases at least, prices in the eastern territory are higher than in the central. Apparently there is no base zone which is comparable to that existing in the case of newsprint.

Fine paper.—Most varieties of fine paper are sold on the basis of distributors' resale zones. Mill prices paid by distributors apparently do not vary in any clearly defined or systematic fashion. For the purposes of resale by distributors, however, the United States is divided into four zones, and prices in these four zones for the many different types of paper products sold through distributors are gener-

⁵⁰ A tabulation prepared by the traffic department of the Chicago Tribune, for use in connection with an Interstate Commerce Commission case, showed that in 1928, 80 to 85 percent of the total newsprint consumption in the United States was at ports or in zones which take a base price or less. The secretary of the code authority of the newsprint industry speaking in 1934, expressed the opinion that the situation had not changed very much as of that time. Hearings on Proposed Recommendations in Respect of the Stabilization of the Newsprint Industry and the Elimination of Unfair Practices and Destructive Competitive Prices, February 1, 1934.

⁵¹ The Paper Mill and Wood Pulp News, January 27, 1940, p. 45.

⁵² Official Board Markets and Fiber Containers.

ally uniform. There are probably a number of factors making this type of price structure possible. Paper distributors are well organized into effective trade associations. Moreover a substantial, though undetermined, amount of paper is distributed by manufacturers on a *del credere* basis⁵³ so that manufacturers can exercise direct control over resale prices. In some ways this system resembles that used in the case of refrigerators where distributors buy f. o. b. mill and resell on a zone basis.

Paper products.—Folding paper boxes, which are one of the most important converted paper products, are sold on a zone basis. It is understood that there are 12 zones. This zone system is one of the practices attacked as violating the antitrust laws in an indictment which has recently been issued in the Federal courts. It is alleged that it constituted one element in a "conspiracy to restrain unreasonably interstate trade in corrugated and solid fibre board shipping containers by unlawfully suppressing and restraining competition among association members * * *,"⁵⁴

PASSENGER AUTOMOBILES

The geographic price structure for the distribution of motor vehicles is usually thought of as an f. o. b. plant system, yet it includes many features commonly associated with the use of basing points. The delivered price at any locality is arrived at by adding all-rail freight from the manufacturer's central plant or headquarters to a uniform f. o. b. plant price.

The significance of this practice should be interpreted in the light of the known characteristics of the industry. In the first place, there are only one or two manufacturers of passenger automobiles whose main plants or offices are located outside of Michigan and these exceptions are not among the largest producers. Consequently prices for the bulk of the product are computed on the basis of all-rail freight from Detroit or some other point in Michigan. On the other hand, a large and probably increasing proportion of cars are at present being assembled at points outside of Michigan and many of the parts entering into the finished vehicle are also being manufactured at places other than the nominal point of shipment. Under these circumstances it is unlikely that the actual cost of shipping parts to the assembly plant and then transporting the finished vehicle to the point of delivery will be the same as the all-rail freight from the central plant to destination. Moreover a substantial and probably increasing proportion of the total number of automobiles produced is shipped to destination either entirely or part way by truck or water; yet, the delivered price is always computed on the basis of all-rail freight.

Consequently the price structure, at least for passenger automobiles, has many of the characteristics of the single basing point system, with the exception that instead of all companies charging freight from some single agreed point, such as Detroit, each company quotes from the location of its own home plant or office. In view of the high concentration of all producers in Michigan, however, this variation is not of

⁵³ The distributor acts as the manufacturer's agent in making the sale, but assumes the added function of guaranteeing the credit of the buyer.

⁵⁴ *U. S. v. National Container Association et al.* (District Court for the Southern District of New York, August 1939 term, returned August 9, 1939).

major significance; for all practical purposes prices paid by buyers vary in much the same way as they would if an orthodox basing point scheme were used.

AGRICULTURAL IMPLEMENTS AND MACHINERY

The general basis of quotation in this industry is f. o. b. plant. A few large producers, however, maintain factories in a number of different places. One of these is usually the headquarters plant, producing a wide line of equipment, while the others may be more specialized. As a result the customary practice is to charge freight either from the main plant or from the actual plant of shipment, whichever results in a lower price to the dealer. This seems to be equivalent to a system of intra-company freight equalization.

The system described is generally adhered to on all transactions west of the Rocky Mountains, and also east of the Rocky Mountains on sales of tractors, harvester-threshers, binders, mowers, cream separators, milkers, and belt-power machines. In the case of plows, harrows, cultivators, and other ground-working implements, however, some manufacturers, including at least one very large producer, adhere to the f. o. b. factory or headquarters basis, while others sell f. o. b. established Missouri River points (or Minneapolis) for central western territories and f. o. b. branch houses in eastern territories. This latter practice probably reflects the historical development of the industry. Originally implements were usually distributed through local wholesale jobbers, who, in pricing goods, added their freight cost to the price which they paid to manufacturers. For practical purposes this was usually equivalent to f. o. b. Missouri River points and Minneapolis, which were the centers of wholesale distribution for the Middle West. As distribution gradually shifted from jobbers to company-owned branch houses, the practice of quoting f. o. b. Missouri River points and Minneapolis was retained by some concerns for the types of product for which this had been the traditional practice. Implements which were introduced after the change in distributive practice, including much of the newer, heavier, mechanical equipment, are quoted by all concerns on the f. o. b. plant basis.

In order to reduce freight charges to a minimum, dealers may avail themselves of the storage-in-transit privilege (giving the dealer most of the advantage of through rates) on goods shipped to dealers through branches. In this way the delivered price to the dealer will be based upon the through rate from the plant and not upon the sum of the straight haul rates from factory to distributor and from distributor to dealer. Pool car shipments can also be used to permit several dealers to combine their requirements into full carloads and thus to avoid the extra cost of l. c. l. freight. The general practices which have been described are apparently modified to some extent by unsystematic freight absorption to meet competition in individual cases.

MACHINERY AND RELATED PRODUCTS

(Other than automotive and agricultural)

In general the market for machinery (other than automotive and agricultural) may be considered to embrace two distinct types of

transaction; those in which the product is made to order to the specifications of the buyer and those in which the product is a standard item regularly stocked and distributed by the seller.

In transactions of the first sort, relating to made-to-order equipment, each sale constitutes essentially a separate contract, all terms of which are subject to direct bargaining. The cost of shipment merely comprises one of the terms which must be considered by the seller in determining his offer and which the buyer will take into account in deciding whose offer to accept. It is understood that the bulk of these contract sales are on an f. o. b. plant basis, in which case the price quoted by the seller undoubtedly reflects the availability of competing offers from more advantageously located plants. If the terms of the contract contemplate installation, then the element of freight is, of course, included directly in the quotation or bid. In either event, since each transaction of this kind is in a sense unique, it cannot be strictly said that any geographic price structure exists in the ordinary sense. While no accurate figures are available, it has been estimated that the majority of industrial machinery in terms of dollar volume is sold on a contract basis.

The second major type of transaction involves standard items which are produced in sufficient quantity to warrant the seller in quoting a regular list price. Items of this kind are frequently called "catalogue items" to indicate that they are described and quoted in a catalogue or other list issued by the producer. This group includes most of the smaller varieties of machinery such as electric motors of moderate size, standard pumps, and similar types of equipment which are not made to order to meet the needs of the individual buyer. Apparently most products of this kind are sold on a delivered basis, using the postage stamp or the zone system, though at least one large manufacturer adheres to straight f. o. b. plant pricing. The practice followed varies for different branches of the industry and is not always standardized even as between competing companies manufacturing similar products. The following information is the best available regarding the practices encountered in the sales of different kinds of machinery.

Electrical machinery and apparatus.—A comprehensive study of pricing practices in the electrical machinery and apparatus industry was conducted by the Division of Review of the National Recovery Administration during the latter part of 1935. This survey related largely to standard, small items and little data were compiled regarding heavier industrial machinery. According to this report—

Inasmuch as most manufacturers of electrical products sell their products over a wide geographical area, the problem of transportation enters into the price contract. The manufacturer frequently includes freight as part of the total sale. The extreme forms which the price structure may take is sale f. o. b. factory or a delivered price regardless of the customer's location. Other variations are the use of basing points, i. e., freight charged from some point other than the factory, and the use of zones, the most usual being some variant on the theme of east and west. Perhaps the most unusual is the pole line hardware group, having three zones, one of which is the single State, Arizona. In several groups, the treatment of freight varies among the classes of customers, while in many the character of the freight charge or allowance varies with the size of the order, a form of quantity discount.

It has usually been assumed that the freight element in the price structure changes but little from time to time. It is possible, of course, that such changes were largely the result of the new information suddenly made available about

the practices of others in the industry, and that it was inevitable that there would be numerous changes in the first year of price-filing. This would argue that the record of change was merely temporary. Certainly, the filings for the groups studied show that freight terms are by no means inflexible. However, changes were not merely along the line of the development of uniformity. The outstanding (sic) is that of the rubber-covered building wire group, whose price structure changed from an elaborate system of freight charges to a delivered price basis during the period. This is not an isolated case of structural change, for other groups also recorded revised freight structures.

One form of price change under this head relates to the companies which charge freight from various warehousing points. Since they abandon or add warehouses from time to time the result is an unrecorded change in prices.⁵⁵

Specific information is available in this report with regard to geographic pricing practices used for the following branches of the industry during National Recovery Administration.

(1) Wire, including rubber covered building wire, magnet wire, and flexible cords.⁵⁶

For all these products, the general practice at the end of the code period was to quote a uniform delivered price on all shipments of 100 pounds or more but to sell shipments of less than 100 pounds on an f. o. b. plant basis, purchaser paying full freight. There were some variations in this practice, as, for example, in the case of certain manufacturers of flexible cords who relaxed the 100-pound minimum requirement for freight absorption in the case of individual sales to a few large distributors.

(2) Electric fans.⁵⁷

The general practice was to quote prices f. o. b. destination on orders of 100 pounds or more when the point of destination was a city in which a distributor's warehouse was located. Smaller orders were f. o. b. point of shipment. Apparently the practical effect of this type of structure for orders exceeding 100 pounds would be to make each city in which a distributor's warehouse was located a basing point, with prices uniform at each basing point. Toward the latter part of the code period, it became the practice to quote all Government inquiries f. o. b. destination regardless of weight.

(3) Fractional horsepower electric motors and electric arc welding apparatus.⁵⁸

Price quotations were f. o. b. factory, full freight allowed to destination.

(4) Dry cells and flashlights.⁵⁹

There was a wide variation in the practices used in this branch of the industry. Sales to toy manufacturers were apparently sold f. o. b. factory in all cases; mail-order houses and chain stores were quoted f. o. b. destination in carload lots and f. o. b. warehouses on l. c. l. sales. In the case of one product—the number 6 dry cell—there seems to have been a zone system with a higher delivered price west of the Rocky Mountains than in the East. For the radio B-battery, however, prices were uniform throughout the country.

(5) Radio receiving tubes.⁶⁰

⁵⁵ A Study of Open Price Filing in the Electrical Manufacturing Industry by W. L. Thorp and A. H. Caesar, with the assistance of F. W. Powell, Work Materials No. 78, National Recovery Administration, vol. I, p. 177.

⁵⁶ *Ibid.*, pp. 10-53.

⁵⁷ *Ibid.*, pp. 71-79.

⁵⁸ *Ibid.*, pp. 56-64, 82-88.

⁵⁹ *Ibid.*, pp. 96-108.

⁶⁰ *Ibid.*, pp. 111-117.

The freight structure for this product seems to have been so confused that it was impossible to derive any generalization. According to this report, "Freight is usually f. o. b. destination or f. o. b. plant. There are in addition numerous exceptions such as 'freight allowed to destination on shipments to set manufacturers', 'prepaid 50 tubes or more', 'prepaid any quantity New York area', 'prepaid on 100 or more', and others based on order or customer class involved."

(6) Sockets.⁶¹

On orders of 100 pounds, f. o. b. freight was allowed to any point in the United States; smaller orders were f. o. b. plant; special treatment on some sales was allowed to syndicate stores by certain companies.

(7) Domestic electric heating appliances.⁶²

The general practice was to quote prices f. o. b. factory. There were, however, some companies which quoted delivered prices on orders of 100 pounds or more, orders sent to Metropolitan New York, or orders f. o. b. warehouse.

(8) Food service equipment.⁶³

This branch of the industry included "electrically operated or heated counter appliances, bake ovens, dish washers, meat choppers, coffee mills, potato peelers, drink mixers, slicers, silver burnishers, and other similar appliances." According to the report this diversity in product was reflected in a similar diversity in type of structure:

During the period of open price filing, at least 28 varying sets of delivery terms were used. * * * These terms varied from a simple statement, such as f. o. b. factory, to delivered prices on a zone basis. No trend toward simplification or uniformity is evident.

(9) Laminated phenolic products.⁶⁴

These products are plastics, usually referred to as bakelite, and are widely used for the purpose of insulation. They were sold on the basis of a zone system. Freight was allowed on shipments east of the eastern boundary of Montana, Utah, Wyoming, and Arizona. On shipments west of this line, 5 percent was added to the net price and freight was prepaid.

(10) Nonremovable plug fuses.⁶⁵

Freight was allowed to destination on sales to very large buyers, wholesalers, syndicates, chains, and the United States Government; quotations to other buyers were f. o. b. factory or warehouse.

(11) Panelboards.⁶⁶

This branch of the industry used a two-zone system, with the line of demarcation at 102 degrees west longitude. There were numerous variations for specific points.

(12) Pole line hardware.⁶⁷

There were three distinct zones; the western division and eastern division, and one division comprising only the State of Arizona. Not only prices but other terms of sale varied in each of the three geographic areas. The reason for the special treatment of Arizona, in which prices were higher than in either of the two other divisions, is not clear.

⁶¹ Ibid., pp. 120-128.

⁶² Ibid., pp. 133-140.

⁶³ Ibid., pp. 142-148.

⁶⁴ Ibid., pp. 153-162.

⁶⁵ Ibid., pp. 168-169.

⁶⁶ Ibid., pp. 170-171.

⁶⁷ Ibid., pp. 171-173.

Since this study of practices under the National Recovery Administration Codes was made in 1935, numerous changes have undoubtedly occurred, but it has been impractical, within the time limits for this study, to make a detailed inquiry. Evidence of some change is indicated by the fact that cease-and-desist orders, issued by the Federal Trade Commission, have been directly concerned with geographic pricing practices in the electrical machinery industry. The first of these, which was issued on December 29, 1936, directed the National Electric Manufacturers' Association and others to cease and desist from maintaining uniform delivered prices either throughout the United States or by zones for power cable and "safecote" rubber-covered building wire.⁶⁸ The second, which was issued on April 2, 1937, ordered the General Electric Co. and the Westinghouse Electric & Manufacturing Co., and other respondents, to stop selling turbine generators and condensers at uniform delivered prices.⁶⁹

More current information regarding geographic pricing practices in this branch of the industry is generally limited. However, according to Mund,⁷⁰ the system of granting full freight allowance for electrical equipment is still common. Thus, rubber-covered building wire, electric lamps, cable accessories and magnet wire, turbines, lightning arrestors, and switch gear are all quoted f. o. b. plant with freight allowed and prepaid to destination. Arc welding electrodes, power cable, street-lighting equipment and distribution transformers are sold with freight allowance within specified zones. Portable electric tools, dry-cell batteries and flashlights, electric fans, and many other varieties of electric merchandise are quoted freight allowed to distributors. In most of these cases, some minimum shipment (usually 100 pounds) must be ordered in order to receive the allowance.⁷¹

Milling machines, grinding machines, screw machines, etc.—There is some conflict in evidence as to the geographic structure most commonly observed in the sale of catalogue items falling into this category. One leading producer quotes on a straight f. o. b. plant basis, with no provision for equalization and explains this policy on the ground that differences in design, often protected by patented features, make possible a substantial degree of nonprice emphasis. There are, however, some reports of the use of freight equalization by other sellers.

Engines, turbines, water wheels, and windmills.—The heavier items in this group are contract items which do not fall into any clear category as regards geographical pricing practice. It is understood that lighter standard products, such as light diesel and gasoline engines, are sold at delivered prices which tend to be uniform throughout the United States.

Pumps.—Pumps are usually sold on a uniform delivered price basis throughout the country, but practice is not uniform. In some cases the same practice is followed on sales of combinations of pumps and pumping engines, probably because both these products are frequently manufactured by the same companies. On the other hand, one manufacturer of windmill type pumps, which can be operated either by a windmill or an engine, is reported to be selling on an f. o. b. factory basis.

⁶⁸ F. T. C. Docket No. 2565.

⁶⁹ F. T. C. Docket No. 2941.

⁷⁰ Op. cit.

⁷¹ Ibid, pp. 232, 237.

Excavating and road machinery.—In discussing industrial plant machinery it was pointed out that cheaper items were usually standard in design while more expensive products were made to order on the basis of individual contracts. In the case of excavating and road machinery, such as steam shovels, although the individual product is usually quite expensive, it is nevertheless more or less standardized. Consequently, there is a tendency for prices to be adjusted to the needs of the individual transaction, even though the item may be of standard design. According to the best information available, sales are usually on an f. o. b. factory basis, but the seller is likely to adjust his offer on any unsystematic basis in order to compete with other sellers located nearer the point of destination.

Business and trade equipment.—Although the Census of Manufactures includes such items as business machines, scales, and balances in the general category of machinery, they are, of course, essentially different in market characteristics. Since freight is a smaller relative element in the cost of these products than for machinery generally, there is apparently a greater tendency for the maintenance of uniform delivered prices. Typewriters are generally sold on a uniform delivered price basis anywhere in the United States. The same is probably true of commercial scales and balances, comptometers and calculating machines, accounting machines, and similar office equipment. However, at least one manufacturer of industrial scales sells on a zone basis through the use of varying discounts from list prices for different parts of the country.

ELECTRICAL HOUSEHOLD EQUIPMENT

Electric refrigerators.—The geographic price structure of the electrical refrigerator industry presents a combination of an f. o. b. factory system at the wholesale level and a zone price system at the retail level.

The most common channel of distribution for this product is from manufacturer to wholesale distributor to dealer to consumer. Sales by manufacturers to wholesale distributors are on a simple f. o. b. plant basis; there is no evidence of the use of any scheme of freight absorption or equalization.⁷² Consequently, the delivered prices paid by distributors vary with their distance freightwise from the plant. According to the price list of one manufacturer, the approximate average carload freight from his plant in the Middle West to points on the west coast is \$1.55 per hundred pounds. This is equivalent to between \$6 and \$7 for a typical 6-cubic-foot refrigerator weighing about 400 pounds and quoted at slightly over \$100, f. o. b. factory.

This point-to-point variation in delivered prices paid by distributors is not reflected in a similar pattern in retail markets. This is probably due in part to the merchandising policy of most manufacturers which contemplates some degree of control over the retail price level. In addition, retail prices are affected to some extent by the practice of price lining which is described in detail in another chapter of this report.⁷³

Since freight constitutes a substantial element on shipments to areas remote from the plant, national uniformity of retail prices would

⁷² These comments refer to current practice. However, in 1937 at least one company allowed carlot freight to the distributor's city.

⁷³ Appendix II, p. 249.

be difficult to maintain, and a zone system has been adopted as a compromise. The general practice divides the country into four zones, though at least one manufacturer uses only three and, since 1940, one concern has combined the entire region east of the Rockies into a single zone. Price variations between zones correspond roughly to the average cost of shipment into the zones. The zone system applies to sales by distributors to retail dealers as well as on retail sales to consumers. The variation between the point-to-point system followed on sales by manufacturers and the zone price structure is therefore absorbed by the distributors; those located in the portion of the zone nearest the plant are able to obtain a slightly higher mark-up than those on the outer boundaries of the zone. However, this variation may not be very important and it probably does not exceed \$1 or \$2 a unit.

Unlike industries in which zone boundaries have been rigidly fixed by custom and are universally observed, each manufacturer apparently adjusts his zoning system to meet his own particular requirements. Thus, one manufacturer whose plant is in Detroit includes all of New England in his first or lowest-priced zone; a competitor whose plant is in Chicago includes only the area immediately adjacent to Chicago as his home zone, and classes not only New England, but also the entire eastern seaboard north of South Carolina as his third zone. Presumably these variations are made possible by the fact that refrigerators are differentiated products so that minor price differences between similar models can readily exist in the same market.

The actual extent of price variation for a typical 6-foot refrigerator at each marketing level is indicated in the following table. Price differences at the retail level expressed in absolute figures are somewhat greater than at the distributive levels but, when expressed in terms of percentage, mark-ups are about the same in all areas. The influence of "price lines" upon the retail price structure is evident.

TABLE 3.—*Prices of electric refrigerators*

Zone	F. o. b. to distributor	Average freight to zone ¹	Total delivered cost to distributor ¹	Cost to retailer ¹	Retail price to consumer ²
1.....	\$94.31	\$2.63	\$96.94	\$111.22	\$182.95
2.....	94.31	4.31	98.62	112.47	184.95
3.....	94.31	5.25	99.56	114.34	187.95
4.....	94.31	5.81	100.12	115.59	189.95

¹ Varies from point to point within zone.

² Uniform throughout zone.

Source: Manufacturer's printed price list.

Since the beginning of 1940, there have been substantial price readjustments in the industry, but geographic price relationships appear to have been generally retained upon the same basis. However, as mentioned above, one large producer now observes only two zones, east and west of the Rockies.

Electric washing machines and ranges.—The geographic price structure observed by most manufacturers of electric washing machines and ranges is similar in all important respects to that described for electric refrigerators.

Vacuum cleaners and fans.—The practices prevailing during National Recovery Administration in connection with the sale of electric fans have been discussed in connection with the general consideration of electrical machinery and apparatus. The same system is observed currently and applies also to the sale of vacuum cleaners. On shipments of 100 pounds or more, freight is prepaid, resulting in a uniform nation-wide delivered price. When the shipment is less than 100 pounds, the buyer pays the freight.

NONFERROUS METALS

There are wide variations in the geographic price structures observed in the sale of different nonferrous metals. In some cases totally different structures may even apply to different grades of the same metal. Since it is impractical to describe these price systems for anything approaching a complete list, a few of the more important metals have been selected to illustrate the types of variation which are encountered.

Aluminum.—Aluminum is sold at a uniform delivered price anywhere in the United States. Since this product is subject to a virtually complete monopoly, the choice of price system presumably represents a decision as to marketing expediency by the Aluminum Co. of America. The reasons for this choice of policy are not obvious, though it is possible that its simplicity may be an important consideration. The relatively minor importance of freight as a cost element is presumably a factor; according to the Interstate Commerce Commission freight revenue on shipments of aluminum amounted to only 3.24 percent of value at destination for the calendar year 1936.

Zinc.—There are three primary grades of zinc; in order of increasing purity, these are Prime Western, Brass Special, and High Grade Electrolytic. Approximately 30 percent of production, by volume, falls into each of the first two grades and the remaining 40 percent is Electrolytic. The most important use of prime western zinc is for galvanizing. The Brass grade, as implied in the name, is used for brass production. High Grade Electrolytic, which is approximately 99.9 percent pure, is used in the electrical and chemical industries.

The Prime Western and the Brass grades are both sold on the basis of a single basing point at East St. Louis, Ill. Although a New York price for these products is regularly quoted in trade publications, this is arrived at simply by adding freight to the East St. Louis quotation and does not imply the existence of an additional basing point in New York. In interpreting this practice, it is of interest that there is no large concentration of production at East St. Louis, so that the situation differs from that in the steel industry where Pittsburgh is a major producing area. There is in fact only one active smelter at St. Louis. However, the tri-State area of Missouri, Oklahoma, and Kansas, which is located within three or four hundred miles of East St. Louis, is the largest producing area in the country. It is understood that transportation costs from the principal producing points to major consuming centers average out roughly when computed from East St. Louis. The character of the railroad freight structure is a contributing factor. The freight rate from middle western zinc smelters (west of the Mississippi River), which account for the bulk

of production to the chief consuming centers, is said to be approximately equal to the sum of the rates from smelters to East St. Louis and from East St. Louis to destination, although some deviation may occur. On the other hand, there is one important producer in New Jersey which, although remote from the basing point, observes the same geographic structure.

The actual form of quotation may be either f. o. b. East St. Louis, or delivered including freight from East St. Louis. Quotations on the latter basis are sometimes slightly higher than on the former because a delay is involved in settlement for the purchase so that interest charges may be added.

As is true in other industries, large buyers are often able to obtain concessions from nominal quotations, though prices to smaller users follow the basing point structure quite closely. In general the system seems to be more closely adhered to for the Prime Western grade than for the Brass grades, because the latter are produced largely to order.

Electrolytic zinc, in contrast to the other two grades, is sold at uniform delivered prices anywhere in the United States. The reasons for this difference in practice have not been determined.

Lead.—The price structure for lead is not as well defined as that for zinc. As in the case of zinc, the general structure is a basing-point system with St. Louis, Mo., as the base. However, prices are also quoted at New York and the relationship between St. Louis and New York prices varies. New York prices are higher than those at St. Louis but not necessarily by the amount equivalent to the freight difference. As a result both of these cities are basing points, with delivered prices determined by a lower sum of base price and freight from destination. Part of the variation between price trends at New York and St. Louis is attributed to the competition of imports at New York.

The price structure for lead tends to be somewhat flexible because of the fact that one large producer—the American Smelting & Refining Co.—often quotes prices somewhat lower than those announced by the acknowledged price leader in the industry—the St. Joseph Lead Co. Under such circumstances, adherence to the nominal geographic structure is probably not always close.

Copper.—Copper is almost always sold at delivered prices. For electrolytic copper, which represents roughly 85 percent of the copper consumption of the United States, this practice means chiefly delivered at the Connecticut Valley, where most of the brass mills, constituting the biggest consumers of this form of copper, are located. However some copper, mainly that sold for electrical purposes, is delivered at other points, principally in New York and New England.

On the bulk of all electrolytic copper that is sold, the delivered prices are arrived at on the basis of an f. o. b. New York price plus charges for transportation and interest from New York. This situation arises from the fact that approximately 90 percent of all copper refining is done in the vicinity of New York City.⁷⁴ There are said to be only three refineries located outside this area—one at Great Falls, Mont., from which the copper is shipped mainly to the Con-

⁷⁴ The smelters for the copper ore are all located in the West. The product of the smelters, blister copper, is shipped to the refineries and generally is refined under a toll arrangement. Very little blister copper, as such, is sold.

necticut Valley, one at Baltimore where the copper is mostly consumed by a local rolling mill, and one at Tacoma, Wash., which refines copper primarily on toll for the foreign trade. On the copper coming into the Connecticut Valley from refineries other than those located in the New York area, prices are arrived at by adding freight and interest from the New York basing point.

A number of years ago there is said to have been an exception to the practice of adding freight and interest charges to f. o. b. New York prices in arriving at delivered prices. Delivery was made in the general area surrounding the refineries free of charge, and transportation was included only when the freight costs amounted to a substantial figure. Whether or not this practice still prevails is not known.

The practice of selling refined virgin copper f. o. b. New York basing point has generally been imitated in the sale of secondary copper. Secondary copper is produced by collecting and remelting scrap copper and is not as pure a product as refined copper. However, it is directly competitive with virgin copper in the manufacture of brass, for which purpose minor impurities are not objectionable, and is sold delivered at the Connecticut Valley on the basis of the f. o. b. New York price for virgin copper plus transportation and interest charges. The price for secondary copper is largely influenced by trading in the organized futures market in New York City.

While the refineries are highly concentrated in the vicinity of New York, the remelting plants are widely scattered over the country. For that reason, freight absorption is typical or general in the sale of secondary copper while, because of the high concentration of refineries in the New York area, it is exceptional in the case of refined or virgin electrolytic copper. Consequently net realizations to the seller on secondary copper vary widely, depending on the location of the remelting plants, while realizations in the case of refined copper are generally uniform.

Lake copper.—Lake copper is found in the natural state in the form of the metal rather than the ore, and its production involves separation rather than a refining process. It is produced mainly in Michigan and consumed principally in the Detroit area. It represents only about 15 percent of the total copper produced in the United States. While the geographic price structure for lake copper has not been definitely ascertained, it clearly differs from that of the electrolytic metal. Price quotations for lake copper delivered in the Midwest are the same as for delivery in the Connecticut Valley, while electrolytic copper is 0.125 cent higher in the former than in the latter area because of the difference in freight from the New York base. As a result, lake copper and electrolytic copper are quoted at the same level in the Connecticut Valley, but the price of lake copper is slightly lower than that of the electrolytic in the Midwest.

*Scrap metal.*⁷⁵—Scrap metal is an important factor in most metal markets. Prices for scrap metal, however, are apparently quoted by buyers rather than by sellers, presumably because the former are in a stronger economic position and can exercise an important direct influence upon the market. Prices for scrap are quoted in the Daily Metal Trade on the following basis:

⁷⁵ Nonferrous metals.

In lots of 100 pounds or more, order basis, f. o. b. point of shipment. Actual freight allowed not exceeding \$1 per hundredweight for complete shipment at any time on an order basis in lots of 100 pounds net or more. Additional one-half cent per pound allowance for shipment of 10,000 pounds or more at one time.

The result of this form of quotation may be to equalize the bids of competing buyers at the point of shipment and thus to prevent prices from being raised by competition for supplies.

PETROLEUM AND ITS PRODUCTS

The geographic price structure for petroleum and its products is not as well defined nor adhered to as that for most of the other non-agricultural commodities which have been described. Constantly changing competitive conditions due partly to the frequent discovery of new producing fields probably prevents practice from crystallizing.

In general, crude oil is sold f. o. b. producing field, while gasoline is usually quoted on a delivered basis. Methods of marketing these products were described in detail at hearings before the Temporary National Economic Committee held during October 1939, and consequently only the outstanding characteristics of these practices will be described here.

Crude oil.—Prices for crude oil at each field are nominally based upon a "posted" price set by one or more purchasers. The number of refiners obtaining crude oil from any one field is usually quite limited, and some one of these commonly acts as the leader in posting prices, or as a witness for the industry phrased it, "the interpreter of market conditions."⁷⁶ According to the same witness this posted price is said to reflect "so far as competitive conditions will permit, the relative value of the crude at the refinery."⁷⁷ Of course, competition for supplies between differently located refiners is an important factor in determining the posted price in any field and the system itself, insofar as it is adhered to, may have some effect in preventing prices from being "bid up" by this kind of competition between buyers.

Although prices posted by all refiners in any single field at any one time for oil of a designated specific gravity are usually identical, this does not mean that all transactions take place at this price. If the market is weak some sales will be made at a discount; if the market is strong some oil may move at a premium. Of course, when the posted price comes to be honored in the breach more than in the observance it is adjusted, and over any long period of time it is probable that the bulk of crude oil moves at the posted price level. According to one witness for the industry, "at times as much as 20 percent, at times practically none" is sold at levels below the posted price.⁷⁸

Gasoline.—The geographic price structure for gasoline varies in different sections of the country. There are 10 basic refining districts in the United States, of which 3, the Gulf (including the Louisiana and Texas refining districts), "group 3" (comprising primarily Oklahoma, Texas, and Missouri), and the Pacific coast, are the most important. Of these the Gulf district shipping by water, supplies most of the Atlantic seaboard. "Group 3" governs prices through much of the Midwest, and the Pacific coast supplies part of the Rocky Moun-

⁷⁶ See Temporary National Economic Committee Hearings, Part 17, p. 9945.

⁷⁷ *Ibid.*, p. 9944.

⁷⁸ Temporary National Economic Committee Hearings, Part 15, p. 8358.

tain area in addition to the west coast. There is some competition between these districts in border areas, in which gasoline from different sources meets; thus parts of Ohio may be served by the Gulf district via the east coast as well as by the "group 3" refineries. In addition minor refining districts affect the price structure in many sections; this is true, for example, of the Appalachian area in Pennsylvania, of the Illinois area, etc.

Quotations for each of these refinery districts are published daily in Platt's Oilgram and usually indicate a range of prices obtained from a number of buyers and sellers.

In most districts other than "group 3" delivered prices vary with shipping costs from the refinery, subject, however, to a great deal of unsystematic freight equalization to meet competition. For example, some of the Gulf crude oil is refined along the Gulf and shipped as gasoline at Atlantic ports, but some is transported in the form of petroleum to be refined at various points along the eastern seaboard. Gasoline for sale at inland destinations accessible to more than one seaport may, therefore, proceed along various routes and competition is likely to be reflected in a certain amount of unsystematic freight absorption or equalization.

In "group 3" area, the nominal price structure is based upon all rail freight from a single basing point at Tulsa, Oklahoma. The development of this structure may be traced to the fact that the rail freight rate schedules in this area, known as the "group 3" rates, are such that transportation charges to any given destination in the Midwest are the same from any point of origin in the midcontinent producing area. The delivered price at any destination, therefore, will be the Tulsa price as reported in Platt's Oilgram plus all rail freight from Tulsa. Insofar as shipments are actually made by rail and in the form of gasoline, this result does not differ from what would have been obtained if the quotation were f. o. b. refinery. However, there are two additional means of transportation available, shipment of gasoline from refineries in the midcontinent district by pipe line to destination, and transportation of the crude oil from this district by pipe line to refineries in consuming areas. Both of these methods of transportation are cheaper than all rail freight and neither is reflected in the nominal delivered price structure. Consequently the "Tulsa plus" practice in the "group 3" territory, to the extent to which it is observed, can properly be described as a single basing point.

Increasing difficulty is apparently being encountered in maintaining this price structure in the "group 3" area, primarily because of the development of new oil fields in Illinois, Michigan, and elsewhere. For this reason the practice described is probably subject to substantially more variation than is true for such products as steel or cement.

BITUMINOUS COAL

The market for bituminous coal is extremely complex. In any given consuming center, there may be competition among many different varieties of coal coming from different mines and shipped by different means of transportation. In many cities shipments may be received by rail, truck, and water. Because of the extremely keen character of competition, producers have generally been willing to grant whatever

concessions were necessary to make sales. The result can best be described as an extremely unsystematic process of freight equalization.

The Bituminous Coal Division, in establishing minimum prices under the provisions of the Bituminous Coal Act of 1937, has largely recognized prevailing practice. Price schedules at each mine often include differentials depending upon both the destination and the method of shipment, and an effort has been made by means of these differentials to equalize destination prices for similar or competing fuels.

SUMMARY—EXTENT OF MAJOR TYPES OF GEOGRAPHIC PRICE STRUCTURE

The descriptions of the geographic price structures of specific products and groups of products which have been presented in this chapter indicate that many of them do not fall into any simple pattern. Any method of classification is necessarily arbitrary and must ignore many significant variations of practice. Nevertheless, an attempt has been made to indicate the extent to which the outstanding major types of geographic price structure have been encountered in the course of this analysis.

Uniform f. o. b. plant pricing.—Uniform f. o. b. plant pricing subject to minor variations is characteristic of the following kinds of commodities:

1. The products of light consumer goods manufacturing industries, particularly when sold with emphasis upon trade-marks or brand names, including textile yarns, gray goods, and cloth, except rayon yarn; apparel; leather and leather footwear; certain staple food items such as wheat flour; bulk cheese; canned and dried fruits; canned tomatoes; lard; black pepper. Other prepared foods when sold in bulk or under distributor's or unadvertised labels, including corn meal; crackers; chocolate coating; rice; cocoa; coffee; tea; creamery butter; processed cheese; canned soup; canned vegetables; canned salmon; vinegar; vegetable shortening. Certain standard drug items sold under their chemical names, such as dextrose, cocaine, ether, etc.

2. Some unstandardized products in which competition is primarily on a nonprice basis: Household furniture; some industrial machinery.

3. Certain items whose production is confined within a narrow geographic area: Phosphate rock; superphosphate; turpentine; philippine mahogany (sold f. o. b. its main port of entry).

4. Some industrial raw materials in which the price structure is largely controlled by buyers: Nonferrous scrap metal; cottonseed (at least until 1934).

5. Automobiles, though the structure has some of the elements of a basing point system.

6. Agricultural implements, subject to occasional freight equalization.

7. Lake Superior iron ore (f. o. b. lower lake ports).

8. Imported iron ores (f. o. b. ports).

Uniform delivered prices.—In most cases the term "uniform delivered price" applies to delivery at railroad destination, but it may also include delivery to the plant warehouse or retail outlet of the buyer. All types of pricing practice which arrive at this result have been included in this category, whether they take the form of a delivered

price quotation, a price f. o. b. destination, or a price f. o. b. shipping point with freight allowed or prepaid.

Uniform delivered prices throughout the United States, subject to minor modifications, have been observed for the following kinds of products:

1. Many light consumer goods sold under nationally advertised manufacturers' brands, particularly where the manufacturer makes some effort to control resale price: Branded drugs, toiletries, and cosmetics; cigarettes, cigars, and smoking tobacco. Many nationally advertised branded foods and groceries, including coffee, vegetable shortening, ginger ale and club soda, grape juice, corn flakes, wheat cereal, crackers, macaroni (also private brands), pretzels (also bulk), condensed milk (also private brands), powdered milk, soap (toilet, laundry, and flakes—also private brands), canned soup, canned vegetables (some brands), jelly (some manufacturers' brands, also private brands), molasses (some brands, also bulk), oleomargarine (also private brands), peanut butter (some private brands), tea, vinegar (some manufacturers' brands, also private brands).

2. A limited number of additional products, usually in cases where freight is a relatively minor item in the delivered price: Most hardware, tools, and other light fabricated steel; most electrical machinery; electric fans and vacuum cleaners; business machines, such as typewriters; insulation board; plumbing fixtures; aluminum; electrolytic zinc; rayon yarn; manila rope; leather transmission belting; mahogany; many planing-mill products. Some chemicals, usually with relatively high value per unit of weight, e. g., butyl acetate; coal-tar dyes.

Zone delivered prices.—The following products are sold on a zone basis with delivered prices generally uniform within each zone:

1. Some food products, including corn flakes, farina, and oatmeal; bulk powdered milk; evaporated milk; vegetable oil; processed cheese (nationally advertised); rice (nationally advertised); some brands of baked beans; jelly (some brands); molasses (some brands); peanut butter (some brands); packaged starch; packaged sirup in some areas.

2. Paper and most paper products.

3. Snuff.

4. Mixed fertilizer.

5. Some chemicals: Synthetic methanol; carbon tetrachloride (except Pacific and Mountain States); carbon black; industrial benzol (east of Omaha); cyanamid; hydrochloric acid, soda ash, and sodium hydroxide (in l. c. l. lots only); flake calcium chloride.

6. Some building materials; Linseed oil, prepared paints (national brands), white lead, doors, windows and window frames.

7. Business furniture.

8. Some electrical machinery.

9. Electrical household equipment: Refrigerators (sales to retailers and consumers only); washing machines; electric ranges.

Freight equalization.—The following list of products comprises those in the sale of which freight equalization is systematically or at least regularly practiced. In addition, it should be remembered, sporadic freight absorption to meet competition occurs in many markets in which some other form of geographic price structure is dominant:

1. Salt.

2. Many building materials: Lime; floor tile; sewer pipe; gypsum plaster; prepared roofing; window glass; heating boilers and radiation.

3. Binder twine.

4. Many heavy chemicals, e. g., sulfuric acid; sodium bichromate; tribasic calcium phosphate; aluminum sulfate; soda ash; sodium hydroxide; sodium silicate; hydrochloric acid; anhydrous ammonia; sodium bicarbonate; calcium carbide; hydrogen peroxide; tribasic sodium phosphate; nitrocellulose; acetic acid (except seaboard states).

5. Unsystematic freight equalization occurs in the sale of: Much industrial machinery; Douglas fir; Ponderosa pine; gasoline; bituminous coal.

Basing point industries.—The following products are sold in accordance with a single basing-point system: Maple flooring; zinc (except electrolytic); copper (except lake copper); industrial benzol (region Omaha and west); gasoline (group 3 district, subject to considerable variation).

Multiple basing points.—Multiple basing points are observed in the following industries: Cement; pulp; southern pine (subject to considerable variation); oak flooring; lead; steel; muriate of potash; sugar.

Local markets.—The markets for some products are so purely local that no geographic price structure in the ordinary sense can be said to exist. Outstanding examples of this situation are: Brick; sand and gravel; building tile; bread.

Unsystematic variation.—In the case of some products, delivered prices are so largely determined by local conditions, that there is no systematic pattern of variation. This is true of: Most agricultural commodities; meats.

PART III

PRICES AND PRICE MARGINS IN THE
DRUG TRADE

BY

SAUL NELSON AND LAURA MAE BROWN

ASSISTED BY

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PART III

PREFACE

Retail prices are of primary importance to the economy. It is the price charged to the consumer which, in the last analysis, determines his standard of living and his purchasing power; that is, the amount and variety of goods and services which he is able to buy on the market. It is the consumer's purchasing power which, in turn, governs the demand for labor and material resources used in production of the goods produced by this great sector of the economy. It was pointed out in part I of this volume that most recent studies of prices have concentrated largely upon prices in wholesale markets and have accorded insufficient emphasis to the importance of retail prices.

Part III is concerned with the behavior of retail prices and with the price spread between wholesale and retail markets in one selected field—drugs, toiletries, and drug sundries. The bulk of these products is sold by retail druggists. They are of particular interest at the present time because they afford the outstanding illustration of the effect of resale price maintenance legislation upon retail prices and distributive margins. Some of the economic implications of this legislation have been discussed in part I of this volume. Part III makes no further appraisal, but merely presents factual data which may serve as a guide to policy.

Part III consists of three chapters. The first is a brief description of some of the salient characteristics of the market for products handled by the drug trade. It points out that competition in the sale of these products has for a number of reasons emphasized considerations other than price, such as brand names, advertising, quality, fancy packaging, and service, and describes some of the methods used by manufacturers to control retail prices and distributive margins, including particularly the so-called Fair Trade Acts.

Chapter II discusses various characteristics of the retail price behavior of these products; in particular the trend of retail prices over a period of years and the effect of resale price maintenance legislation upon this trend, the extent to which retail prices vary between different stores, and comparative prices of nationally advertised merchandise and of similar products sold under less well known or private labels.

Chapter III presents data regarding the distributive margins or mark-ups obtained by wholesalers and retailers on the sale of these articles and describes the price structures for a few selected items in some detail. This is followed by a more general summary of margins for a wide variety of products.

The retail price data presented in this study are based largely upon the records of the Retail Price Division of the Bureau of Labor Statistics. Some unpublished information regarding retail prices in

one city—Columbus, Ohio—was also made available by the Marketing Laws Survey of the Works Progress Administration. The information regarding wholesale prices and distributive margins was obtained through the helpful cooperation of various members of the industry, including both manufacturers and wholesalers. Mr. Wroe Alderson, of the Curtis Publishing Co., rendered material help in the planning of this study.

Part III was prepared by Saul Nelson and Laura Mae Brown. Bernice M. Montgomery compiled information regarding marketing and pricing policies and price margins and assisted in preparing the report.

CHAPTER I

GENERAL CHARACTERISTICS OF THE MARKET

The retail market for products handled by the drug trade—drugs, toiletries and sundries—is in many respects a peculiar market, because of the nature of the product, the way in which the industry is organized, and the operation of Federal and State laws which govern competitive relations. The very nature of drug products makes it peculiarly difficult for the average consumer to appraise their merits objectively. Of course, problems of selection exist to a greater or less extent in the purchase of most consumers' goods, but in the case of drugs these difficulties are many times multiplied. Thus, while the initial choice between two alternative makes of, say, canned corn or clothing may be difficult, the consumer can and does experiment and judges by his experience. The taste of food products or the wearing qualities of apparel are not beyond the capacity of the average consumer to measure. In the case of drugs, however, experimentation is much less feasible and sometimes even dangerous. The physiological effect of a drug is exceedingly difficult for the user to appraise and even repeated use affords no basis for judgment as to efficacy. Moreover, most buyers are probably completely unaware of the standards established in the United States Pharmacopoeia, and the letters U. S. P. mean little or nothing to him.

The inability of the average consumer to compare products intelligently on a price basis has diverted competition between rival products largely to other things than price, such as advertising, packaging, attractive flavor or odor and the offer of inducements to distributors to stock and push merchandise. Within limits, a low price may even prove to be a competitive disadvantage, particularly if it is considerably lower than the level prevailing for similar merchandise, since some consumers may associate an unusually low price with poor quality. It is sometimes possible to sell more drugs or cosmetics at a price which is at or only slightly below the prevailing level for similar merchandise than it would be at prices materially below that level.

The experience of one large drug chain illustrates this point. A few years ago this organization placed its own private brand of aspirin on the market at the price of 19 cents a hundred tablets. The prevailing price for the best known manufacturer's brand of aspirin ranged from 59 cents to 75 cents a hundred tablets. This very wide differential in price apparently created suspicion among consumers with regard to the merits of the chain-store brand. As a result volume failed to reach a satisfactory level. This suggested new tactics, and the price was raised from 19 cents to 49 cents. Consumers then began to accept it, appearing to decide that it afforded a legitimate opportunity to economize without any sacrifice in quality. Volume soon expanded to a profitable level.

Consequently, in purchasing drugs and similar products, the consumer is forced to rely largely upon advertising claims, or upon the advice of his physician or druggist. Mere excellence of a product will not find it a market unless some forms of sales assistance can be enlisted. Some of the results of this competitive situation have been described in part I of this volume.¹ Wide differences occur between the prices of drug products which are virtually or absolutely identical, and retail prices often bear little if any recognizable relationship to the physical cost of production.

Moreover, the drug store itself differs in a number of respects from most other retail stores. At least some of its sales clerks must conform to certain standards of professional competency. In the case of most independent drug stores the proprietor is himself a registered pharmacist. In fact, many pharmacists think of themselves as professional practitioners first and as retail merchants second; they believe consciously or unconsciously that they are entitled to a greater measure of protection in the conduct of their trade than would be justified for mere lay retailers. The consumer, moreover, usually attributes considerably more weight to the advice of a pharmacist concerning his purchase of drug-store products than he would to that of, say, a grocery clerk, regarding the merits of various food products. All this serves to emphasize the nonprice aspects of competition.

Another distinct characteristic of the drug trade which affects operating costs is the exceptionally large number of different individual items handled. For example, a survey conducted by the Department of Commerce showed that 6, out of a total of 7 independent drug stores studied, carried between 4,500 and 8,200 distinct items.² As a result, the turn-over of individual products is slow and, for the same reason, the independent retailer frequently purchases in very small lots. Thus he will often buy only one or two packages of each item at any one time from his supplier, although in order to give such dealings the dignity of wholesale transactions, they are usually referred to as "1/12 of a dozen lots" or "1/6 of a dozen lots." The only possible effect of such a situation is to raise wholesale and retail operating costs and necessitate wider distributive margins.

RESALE PRICE CONTROLS

Manufacturers of branded drugs, toiletries, and cosmetics, and trade-mark owners other than manufacturers, have long sought to exercise some degree of control over the price at which products bearing their labels were resold on the retail market. The reasons for this policy have been considered in part I of this volume³ and will not be repeated here in detail. It is sufficient for the present purpose to suggest what is probably the most important of these reasons—the desire to maintain retail prices at a level which would yield the druggist a margin sufficient to enlist his active sales cooperation. The so-called fair-trade laws, which at present afford a very effective means of maintaining retail prices, will be described subsequently.

The degree and manner of control exercised by trade-mark owners over retail prices varies considerably. One practice commonly utilized

¹ See *supra*, pp. 80-83.

² Bureau of Foreign and Domestic Commerce, Domestic Commerce Series No. 90, *Cost, Sales, and Profits in the Retail Drug Store*, table 36, pp. 110-111.

³ See *supra*, pp. 60-62, 86-90.

is the establishment of a list price, which may or may not be actually printed on the package. This list price is usually set at even figures (e. g., 25 cents, 50 cents, \$1). Its significance differs considerably; in some cases it is desired or anticipated that the list price should be the actual level at which most transactions take place, in others it is intended to constitute little more than a nominal quotation and there is no objection upon the part of the trade-mark owner to moderate reductions below list. In either case a list price, particularly if it is actually printed on the package, usually constitutes an effective ceiling to prices, since consumers will rarely be willing to pay more than the amount specified. Although the use of a list price is customary, it is by no means universal. Thus, according to a study by the United States Department of Commerce:

Out of 46 commodity groups studied, there are 15 on which list prices are seldom shown. * * * These are after-shaving lotions, baby powders, dental-plate brushes, dusting powder, disinfectants, eye medicines, face creams, face powders, hairbrushes, finger-nail preparations, plasters, shampoos, skin lotions, talcum powders, and sanitary napkins.⁴

In addition to, or in place of a list price, many trade-mark owners also seek to establish a definite minimum below which their product is under no circumstances to be sold at retail. Where there is both a list and a minimum, the relation between the two varies. In some cases the minimum may be established at the full list, in others it may be 1 or 2 cents under list, and, in still others, it may be as much as 20 to 25 percent below list.

Until recently, trade-mark owners had no legal means of requiring the observance of such minimum prices. In fact, in 1911 a Supreme Court decision ruled that any contract between a manufacturer and his distributors providing for the maintenance of minimum resale prices was a violation of the antitrust laws.⁵ For the next 20 years the only method trade-mark owners could lawfully adopt in order to maintain minimum resale prices for their products was to refuse to sell to distributors of whose sales policy they disapproved. Moreover, such "refusal to sell" could only be practiced within certain limits which impaired its effectiveness. Detailed supervision of distributors' sales policies was held illegal.⁶

Two major changes in this situation occurred during the last decade. One of these was only of temporary duration; the National Recovery Administration code for the retail drug trade contained a provision which imposed certain limits upon price cutting. The second and more lasting change has been the enactment of state laws permitting trade-mark owners to contract with their distributors for the maintenance of minimum resale prices and making the provisions of such contracts binding even upon distributors who are not parties to the contract.

Although the first law of this kind was passed by California in 1933, their effectiveness really dates only from December 7, 1936, when the United States Supreme Court upheld their constitutionality.⁷ These decisions greatly stimulated the drive by retail druggists for the enact-

⁴ Bureau of Foreign and Domestic Commerce, Domestic Commerce Series No. 73, Merchandising Requirements of the Drug Store Package, p. 10.

⁵ *Dr. Miles Medical Company v. Parks and Sons* (220 U. S. 373).

⁶ *Federal Trade Commission v. Beech-Nut Packing Co.* (257 U. S. 441); and *Standard Fashion Co. v. Magrane Houston Co.* (258 U. S. 346 (1921)).

⁷ *Pep Boys, Manny, Moe, and Jack, of California v. Pyrool Sales Company, Inc.; Kunsman v. Max Factor and Company, et al.* (299 U. S. 198).

ment of similar legislation in other States. As of June 1940, resale price maintenance was permissible in 44 States, excluding only Texas, Missouri, Vermont, Delaware, and the District of Columbia. The Federal Miller-Tydings Act, which was enacted on August 17, 1937, exempts resale price maintenance contracts in interstate commerce from the prohibitions of the antitrust laws.

The enactment of this legislation and the issuance of price maintenance contracts under its provisions by most leading manufacturers of products handled by the drug trade has had a very marked effect upon the pattern of retail prices for the commodities affected. The nature of this effect will be apparent from an examination of the data presented later in this chapter.

Before proceeding to an examination of these data, however, it is useful to consider briefly the significance of brand names and the varying competitive relationships between different kinds of drug products. At least three distinct situations exist:

(1) There is a wide variety of standard drugs such as milk of magnesia, aspirin, etc., which are regularly sold under those designations, but which carry also the advertised labels of their maker (e. g., Bayer's Aspirin, Squibb's Castor Oil, Phillips' Milk of Magnesia, etc.). There may be considerable differences in the manner of packaging or compounding, but in the main, the active ingredients of these products are identical and their composition is as specified in the United States Pharmacopoeia.

(2) A second group of items is sold alternately under names recognized in the pharmacopoeia and under proprietary designations. For example, the standard hypnotic known as barbitol may also be purchased under the proprietary designation Veronal; Phenacetin is the proprietary name for a brand of acetophenetidin; Aristol-Winthrop is a brand of thymol-iodide, etc. In a case of this sort, a product sold under the proprietary name is usually priced at a level much higher than the identical article sold under its standard chemical nomenclature. (See pt. I, ch. III, table 4, *supra*, p. 77.)

(3) There is finally the proprietary drug, the formula for which is not found in the pharmacopoeia and which is, in a sense, a unique product not precisely duplicated by any other manufacturer. Such a product is known only by its proprietary name (e. g., Ex-Lax, Alka Seltzer, Carter's Liver Pills) and cannot be compared exactly with any other article serving a similar purpose.

CHAPTER II

RETAIL MARKETS

RETAIL PRICE TRENDS, 1929-1939

It is in the light of the general characteristics which have been described in the last chapter that retail price behavior in the drug trade must be appraised. The information for this analysis comes from the Retail Price Division of the Bureau of Labor Statistics which has collected retail price data for certain drugs, toiletries, and sundries for many years. For most of the individual items discussed here quotations have been obtained in recent years from over 130 stores located in 32 cities scattered throughout the United States; 5 quotations are obtained from New York City and Chicago and 4 from each of the remaining cities. This coverage is clearly too small to be adequately representative of the approximately 57,000¹ drug stores in the United States. This is particularly true with regard to independent stores, since convenience of collection made it desirable to concentrate on outlets of at least moderate size, located centrally or near good transportation facilities, largely to the exclusion of very small stores and of stores located in rural or outlying areas. The group of reporting chain stores is probably more representative, especially because quotations from one outlet of a chain frequently hold true for other outlets of the same chain in the same general locality. To some extent, moreover, the wide geographic distribution compensates for the small number of reporting stores in any given city.

In any analysis of price trends for products handled by the drug trade, it is essential to consider individual brands separately and this has further limited the number of quotations available for each product since not all stores report prices for the same brand. For all practical purposes each distinct brand constitutes a distinct commodity. The prices of, say, a nationally advertised and a nonadvertised brand of toothpaste display no closer relationship to each other than does the price of toothpaste to that of razor blades.

The data assembled from these records of the Bureau of Labor Statistics are given in tables 1 to 6, which show the recent trend of retail prices for six widely used drugs, toiletries, or sundries. Data are available as far back as 1929 for the product shown in table 1; for all the others comparable information only extends to 1935 and 1936. Each of these products is chosen to illustrate a somewhat different type of market situation. In general, the data presented in the tables indicate that, in the absence of resale price maintenance, there is usually wide variation between the prices charged by different retailers for any one article. Some stores will sell at the full list price, others at moderate reductions below list, others cut prices very deeply.² However, where minimum prices have been established by contract

¹ U. S. Department of Commerce, Census of Business: 1935, Retail Distribution, vol. I, pp. 1-08.

² In the case of most widely advertised items, trade custom sanctioned reductions not exceeding 10 or 20 percent below the list price, but resented any "deep cut" prices below this level.

the price range is much narrower and, where minimum prices have been established at the full list price of the article, prices for all stores will tend to be uniform. The tables suggest, too, that price cutting at retail over a period of time may cause progressive readjustments in the wholesale prices charged by the manufacturer but that the establishment of minimum prices may make such readjustments unnecessary.

TABLE 1.—Retail prices of nationally advertised analgesic tablets, June 1929–June 1939

Price	Number of stores reporting specified prices														
	June 1929	June 1932	December 1932	June 1933	December 1933	June 1934	November 1934	March 1935	July 1935	October 1935	January 1936	July 1936	December 1936	June 1937	December 1937
\$0.08.						1	1	7	5	9	2	1			
\$0.10.						1				5	4	1	3	1	
\$0.11.						1									
\$0.12.	3	3	3	3	2	4	21	28	24	29	32	37	35	37	38
\$0.125.	1	3	2	2	2	1	1								
\$0.13.	1			1	1	1	6	5	3	3	2	3	3	5	5
\$0.14.	1	3		1											
\$0.15.	32	45	54	58	60	62	44	41	43	39	39	37	37	35	34
\$0.17.				1											
\$0.18.	9	4	3	3	2	2									
\$0.19.	5	4	3	3	2	1									
\$0.20.	25	17	14	7	8	6									
\$0.25.	2														
Total	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79

Source: Bureau of Labor Statistics.

Analgesic tablets.—Table 1 is for a widely used nationally advertised brand of analgesic tablets. It illustrates the tendency for the price of products of this kind to break away from the nominal list price in the absence of legal controls, as well as the change in the situation which occurs after such controls are imposed, bringing more uniform and rigid prices to consumers.

Between June 1929 and May 1934, the nominal list price of this product was 20 cents. During the latter month, both the wholesale price and the list price were reduced, the latter dropping to 15 cents. This was reflected in the sharp change in the prevailing prices charged between June and November 1934. (Retail prices in June 1934 did not yet show the full effect of the change in the wholesale level during May.) Between June 1929 and June 1934 there was a gradual breakdown of the retail price structure, though wholesale prices were not reduced. At the beginning of this period more than one-third of the reported quotations were at full list price and two were actually above list. The number of quotations at 20 cents declined steadily and by the time the wholesale price was reduced, only six of the quotations remained at full list. In the meantime, 15 cents, which had been the typical cut price in 1929, became more and more the accepted price, accounting for over three-fourths of the quotations during 1933 and the first half of 1934. In addition there was a considerable and increasing number of outlets quoting prices substantially below the

15-cent level—12 cents and two for 25 cents. During the latter part of this period, one or two quotations were recorded as low as 10 cents, or 50 percent below the nominal list. To some extent, therefore, the reduction of wholesale prices during May 1934 merely represented a readjustment to a change which had already taken place in the retail market. The sequence of events is of interest because a decline in the retail market preceded that in the wholesale market, and may have been a factor in inducing the manufacturer to announce his reduction.

The drop in wholesale prices was not appreciably reflected in retail quotations until November 1934. The new list price, 15 cents, now became the maximum price, and 12 cents, which had earlier been quoted by only a few outlets, became the common "reduced" price. Outlets which wanted to cut deeply below the prevailing market and which had earlier been charging 12 cents or two for 25 cents now came down to 10 cents.

Between November 1934 and January 1936 there were indications that the sequence of changes which had occurred between 1929 and 1934 might be repeated. The number of quotations at full list declined, those at the usual cut price of 12 cents increased rapidly, and an appreciable number of stores charged a "deep cut" price of 10 cents or even 8 cents.

In the absence of resale price maintenance, it is entirely possible that this would have led eventually to a new reduction at wholesale prices and a further drop at retail. From the point of view of the manufacturer such a change might well have been feasible because the cost of the ingredients of this pharmaceutical, as in the case of most widely advertised proprietary medicines, is quite small in relation to its wholesale price.

However, resale price maintenance was held constitutional by the United States Supreme Court during December 1936 and minimum price contracts for this product are now in effect in 44 States. As a result, sales below the 12-cent minimum became less frequent after 1936 and have now been completely discontinued by retailers reporting to the Bureau of Labor Statistics, including even those located in areas in which price maintenance legislation is not in effect. The most common price at the present time is the minimum price and the number of quotations at the full list price has continued to decline. In this last respect, however, it is questionable whether the establishment of the legal minimum at 12 cents did more than confirm a trend which had been evident since 1934. The evidence available is insufficient to indicate whether the establishment of a legal minimum either retarded or accelerated this trend; it did, however, set a limit beyond which it cannot go, and possibly obviated the need for a periodic readjustment of the wholesale level to compensate for the progressive break-down of the retail price structure.

A drug sundry.—Table 2 is for a nationally advertised brand of drug sundry and shows how the establishment of contractual minimum prices tends to narrow the range of price variability. During August 1935 the manufacturer "suggested" the retail price of 18 cents. On June 29, 1936, this was increased to 19 cents. Since May 1937, minimum prices have been established by contract at 20 cents, or two for 39 cents. Between 1935 and 1939, wholesale prices were increased in about the same proportion.

During 1935 and 1936, while the prices suggested by the manufacturer (18 cents and later 19 cents) were the quotations most commonly reported, there was considerable variation both above and below this suggested level. After price maintenance became effective, the number of stores quoting the minimum increased rapidly. As of March 1939, 102 of 107 stores reported prices of either 20 cents or two for 39 cents,³ three stores reported slightly higher prices, and two, both located in non-"fair-trade" States, charged slightly lower prices.

Of course this does not imply that the establishment of minimum resale prices necessarily eliminates all the influences making for periodic downward readjustment of the wholesale price structure, but merely that it impairs one of the processes leading to such readjustment. Where similar rival products offer effective price competition, manufacturers must still adjust their price policies in order to avoid loss of volume. However, there are many widely advertised drugs and toiletries which are not subject to any effective price competition from rival merchandise and for these the ability of the manufacturer to stabilize the retail price structure may considerably increase his degree of control over the wholesale price structure also.

A shaving article.—Table 3 represents a very different situation. The product in this case is a nationally advertised shaving article. The full list price is 25 cents and the minimum price has been established by contract at this same level in all "fair-trade" States except New York, where the minimum is 24 cents. Before resale price maintenance became effective, there was a substantial number of quotations well below list, most commonly at 19 cents. These reduced prices have all had to be discontinued and all quotations are now at the legal minimum of 25 cents, with the exception of a few stores, all located in New York State, where the minimum is 1 cent lower. This uniformity, which required substantial price advances by a number of stores, seems inevitable when the minimum price and the full list price coincide.

TABLE 2.—*Retail prices of nationally advertised drug sundry, March 1935–March 1939*

Price	Number of stores reporting specified prices										
	March 1935	July 1935	October 1935	Janu- ary 1936	July 1936	Decem- ber 1936	June 1937	Decem- ber 1937	June 1938	Decem- ber 1938	March 1939
\$0.14-----	5	5	1	1	1	-----	-----	-----	-----	-----	-----
\$0.15-----	-----	2	-----	-----	-----	-----	-----	-----	-----	-----	-----
\$0.16-----	-----	1	-----	-----	-----	-----	-----	-----	-----	-----	-----
\$0.17-----	6	6	1	2	2	2	-----	-----	-----	-----	-----
2/\$0.35-----	2	1	2	7	2	2	1	1	-----	-----	-----
\$0.18-----	44	47	62	56	31	7	2	1	1	1	1
2/\$0.37-----	-----	-----	-----	-----	5	6	-----	-----	-----	-----	-----
3/\$0.56-----	-----	-----	-----	-----	-----	-----	1	1	1	-----	-----
\$0.19-----	28	23	19	20	44	71	25	2	1	1	1
2/\$0.39-----	-----	-----	-----	-----	-----	-----	7	6	8	8	8
\$0.20-----	12	16	18	18	17	15	64	91	93	95	94
\$0.21-----	6	3	1	1	2	2	5	2	1	1	2
\$0.22-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
\$0.23-----	2	2	2	1	3	2	-----	1	-----	-----	-----
\$0.24-----	-----	-----	-----	-----	-----	-----	1	1	1	1	1
\$0.25-----	2	1	1	1	-----	-----	1	1	1	-----	-----
Total-----	107	107	107	107	107	107	107	107	107	107	107

Source: Bureau of Labor Statistics.

³ The fact that a store reported 20 cents as its price did not mean that it would not sell two for 39 cents, but merely that most of its sales were in single units.

TABLE 3.—*Retail prices of a nationally advertised shaving article, March 1935–March 1939*

Price	Number of stores reporting specified prices										
	March 1935	July 1935	October 1935	January 1936	July 1936	December 1936	June 1937	December 1937	June 1938	December 1938	March 1939
\$0.14.....									1		
\$0.16.....	2	3	2	1	1					1	
\$0.17.....	1	1	1		1						
\$0.18.....				1							
\$0.19.....	9	10	11	10	4	2	2	1			
\$0.21.....				1		6	2	1			
\$0.23.....	1	2	2	1	1	1	2				
\$0.24.....							2	5	5	4	4
\$0.25.....	97	94	94	96	103	101	102	103	104	105	106
Total.....	110	110	110	110	110	110	110	110	110	110	110

Source: Bureau of Labor Statistics.

TABLE 4.—*Retail prices of a nationally advertised dentifrice, March 1935–March 1939*

Price	Number of stores reporting specified prices										
	March 1935	July 1935	October 1935	January 1936	July 1936	December 1936	June 1937	December 1937	June 1938	December 1938	March 1939
\$0.24.....		1	2	1							
\$0.27.....		1	1								
\$0.28.....		1	1								
\$0.29.....						1					
\$0.30.....		1	1								
\$0.31.....	13	10	9	2	3	1	1				
\$0.33.....				3	10	17	15	18	24	25	25
\$0.34.....	3	3	8	11	8	6	7	5	2	1	1
\$0.35.....		1			1		1	1	1	1	1
\$0.36.....	1							1	1	1	1
\$0.37.....					1		1	1			
\$0.38.....	5	7	1	6	2						
\$0.39.....	5	2	4	4	3	2	3	2			
\$0.41.....	1	1	1	1		1					
Total.....	28	28	28	28	28	28	28	28	28	28	28

Source: Bureau of Labor Statistics.

TABLE 5.—*Retail prices of a nationally advertised liquid laxative, March 1935–March 1939*

Price	Number of stores reporting specified prices										
	March 1935	July 1935	October 1935	January 1936	July 1936	December 1936	June 1937	December 1937	June 1938	December 1938	March 1939
\$0.27.....			1								
\$0.28.....	1	1	1			1			1		
\$0.29.....	6	7	5	4	2	1	2	2	3	5	3
\$0.30.....		1	1	1	1	1	1	1		1	1
\$0.31.....	1	1	2	1					1		
\$0.32.....			2	1							
\$0.33.....			1	2	3	3	3	2	2	2	2
\$0.34.....	9	9	7	12	15	15	15	13	12	11	12
\$0.35.....	1	1							1	1	2
\$0.36.....	3	3	1	1	1	1	1	2	1	1	1
\$0.37.....	1	1	1	2	2	2	2	3	2	2	2
\$0.39.....	21	21	22	21	21	19	20	21	23	23	24
\$0.40.....	1		1	1	1	1	1	1			
\$0.43.....	1	1	1	1	1	2	1	1	1	1	
\$0.44.....	1		1		1	1	1	1			
\$0.45.....	1	2	1	1	1	1				1	1
\$0.48.....	1	1	1	1	1	1	1	1	1	1	1
\$0.50.....	3	2	2	2	1	2	3	3	3	2	2
Total.....	51	51	51	51	51	51	51	51	51	51	51

Source: Bureau of Labor Statistics.

A dentifrice.—Table 4 shows price changes since 1935 for a nationally advertised dentifrice. The minimum price fixed by contract is at present 33 cents; the full list price is 40 cents. Prior to the issuance of price-maintenance contracts, there was a substantial degree of price variation, with 31 cents being the most common price and a considerable number of outlets charging both more and less than this figure. Since 1936 there has been a steady concentration of quotations at the minimum level, and at the present time only three stores are reporting prices above the minimum.

A nationally advertised liquid laxative.—Table 5 is for a nationally advertised liquid laxative which is sold under the provision of the fair-trade laws in only one State—California—where the minimum has been established at 39 cents. The full list price is 50 cents.

The difference in the distribution of price quotations for this product and for the four price-maintained articles previously described is striking; 23 of the 51 quotations are below the 39-cent level which has been established as a minimum price in California; only 4 were at or near the full list price. The California minimum of 39 cents, however, is also the modal or most commonly quoted price. The most frequent deep-cut price is 34 cents, which is approximately 31 percent below list. The distribution of prices as of March 1939 was not markedly different from that for March 1935. It is evident that were this product placed under price maintenance nationally, with the minimum the same as that now in force in California, substantial price increases would be necessary.

A standard, unbranded, liquid laxative.—The quotations in table 6 are for a standard liquid laxative (unrelated to that shown in table 5), which is not sold under a brand name but bottled directly by the retail druggist. There is, of course, no minimum nor list price for this item. The same laxative is sold frequently under a manufacturer's label and a comparison between the prices of the branded and the unbranded product will be presented subsequently. (See table 25, p. 374.)

TABLE 6.—*Retail prices of a standard liquid laxative, July 1936–March 1939*

Price	Number of stores reporting specified prices						
	July 1936	December 1936	June 1937	December 1937	June 1938	December 1938	March 1939
\$0.15.....	8	6	6	6	7	7	7
\$0.17.....	3	3	3	3	3	3	3
\$0.19.....	5	7	7	6	4	4	4
\$0.20.....	7	8	8	10	11	11	11
\$0.21.....				1	1	1	1
\$0.23.....	5	5	5	3	2	2	3
\$0.24.....				1			
\$0.25.....	51	50	49	50	52	53	53
\$0.30.....	3	3	4	3	3	2	1
\$0.35.....	2	2	2	1	1	1	1
Total.....	84	84	84	84	84	84	84

Source: Bureau of Labor Statistics.

This table illustrates the effect of custom and common practice in bringing about uniform quotation where a minimum is not set. Fifty-three of a total of 84 outlets all charge 25 cents for a 4-ounce bottle. Moreover, prices for this nonadvertised item are predomi-

nantly quoted in even figures (25 cents, 20 cents, 15 cents), in contrast with the odd figures (12 cents, 39 cents, two for 39 cents), which have been established as fair-trade minima for the products previously discussed and which were favored even before price-maintenance contracts had been issued. There has been a slight tendency toward lower prices since 1936; the number of quotations above 25 cents has decreased while the number of stores reporting 20 cents has increased.

PRICE TRENDS—CHAINS COMPARED WITH INDEPENDENTS

The foregoing analysis indicates the price trends for these drugs and sundries in all stores reporting to the Bureau of Labor Statistics regardless of whether they were independently owned or were members of chain organizations, in order to indicate what kind of general price situation the consumer faces. Prices quoted by chain stores and by independents for the same products are now shown separately, in tables 7 to 12. Certain differences in price behavior between these two types of outlet are apparent although the general pattern is much the same.

On the basis of this very limited group of commodities, it appears that prices charged by chain drug stores for nationally advertised items are on the average somewhat lower than those charged by independent drug stores, even when minimum prices are in effect. However, where the minimum price is identical with the list price, there is no room for any difference in pricing practice and all outlets are likely to quote the same figure.

On the other hand, there are many independent drug stores which charge prices as low as those charged by any chain store and the price ranges clearly overlap. It can only be said, therefore, that a larger proportion of chain stores than of independents tend to charge low prices for nationally advertised merchandise and that, in the case of price-maintained products, where the minimum price has been established below the list price, a larger proportion of independents than of chains will be found charging the full list price. However, for the one standard nonadvertised product for which data were available, there was no significant difference between prices quoted by chain stores and those quoted by independents.

In the case of the nationally advertised analgesic tablets shown in table 7, for example, 20 independent stores were charging the full list price of 20 cents in 1929 and the same number were charging the regular cut price of 15 cents. Only one independent quoted less than 15 cents. During the same period 5 chain stores reported a price of 20 cents, 12 reported 15 cents and 5 charged 12 cents or 13 cents. By June 1934, 7 independents but only 2 chain stores continued quoting prices exceeding 15 cents; two independents and 6 chain stores were charging less than 15 cents. Subsequent to the wholesale price reduction which took place during 1934, the chain stores again took the lead in reducing prices. From November 1934 on, 12 cents was the price most commonly charged by chain stores while, with the exception of the last period shown—June 1939—15 cents was the price most frequently reported by independents. As of June 1939, 27 of a total of 30 chain stores were charging the fair-trade minimum, while more than half of the independents were quoting more than this minimum.

CONCENTRATION OF ECONOMIC POWER

TABLE 7.—Retail prices of a nationally advertised analgesic tablet, June 1929–June 1939

NUMBER OF INDEPENDENT STORES SELLING AT DESIGNATED PRICES

Retail price	June, 1929	June, 1932	Dec., 1932	June, 1933	Dec., 1933	June, 1934	Nov., 1934	Mar., 1935	July, 1935	Oct., 1935	Jan., 1936	July, 1936	Dec., 1936	June, 1937	Dec., 1937	June, 1938	Dec., 1938	Mar., 1939	June, 1939
\$0.08							2			1	1	1	1	1	1				
\$0.10							8	11	4	11	12	13	14	13	13	16	14	19	23
\$0.12		1	1	1	1	1	1	2	2	2	1	2	2	3	4	1	4	5	
\$0.12½		1	1	1	1	1	3									1	1	1	
\$0.13																			5
\$0.14	1	2								1	1	1	1	1	1	1	2	1	1
\$0.15	20	28	33	37	38	40	35	35	36	33	33	32	31	31	30	27	28	23	20
\$0.17				1															
\$0.18	6	3	3	3	2	2													
\$0.19	1			1	1														
\$0.20	20	14	11	5	6	5													
\$0.25	1																		
Total	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49

NUMBER OF CHAIN STORES SELLING AT DESIGNATED PRICES

\$0.08										1									
\$0.10					1	1	5	4	5	4	3		2						
\$0.11				1	1														
\$0.12	3	2	2	2	1	3	13	17	17	18	20	24	21	24	25	26	26	27	27
\$0.12½	1	2	1	1	1	1													
\$0.13	1			1	1	1	3	3	1	1	1	1	1	2	1	1	1	1	1
\$0.14		1		1															
\$0.15	12	17	21	21	22	22	9	6	7	6	6	5	6	4	4	3	3	2	1
\$0.17	3	1																	
\$0.19	4	4	3	2	1	1													
\$0.20	5	3	3	2	2	1													
\$0.25	1																		
Total	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30

Source: Bureau of Labor Statistics.

TABLE 8.—Retail prices of a nationally advertised drug sundry—March 1935 to March 1939

NUMBER OF INDEPENDENT STORES REPORTING SPECIFIED PRICES

Retail Price	March 1935	July 1935	October 1935	January 1936	July 1936	December 1936	June 1937	December 1937	June 1938	December 1938	March 1939
\$0.14	1	2									
\$0.17	1	1		1	2	1					
\$0.18	14	15	20	20	14	5	2	1	1	1	1
\$0.19	21	19	17	17	23	34	16	2	1	1	1
\$0.20	12	12	14	14	13	11	32	47	50	51	51
\$0.21	2	3	1	1	1	2	3	2	1	1	1
\$0.23	2	2	2	1	2	2		1			
\$0.24							1	1	1	1	1
\$0.25	2	1	1	1			1	1	1		
Total	55	55	55	55	55	55	55	55	55	55	55

NUMBER OF CHAIN STORES REPORTING SPECIFIED PRICES

\$0.14	4	3	1	1	1						
\$0.15		2									
\$0.16		1									
\$0.17	5	5	1	1		1					
2/\$0.35 or \$0.17½	2	1	2	7	2	2	1	1			
\$0.18	30	32	42	36	17	2					
2/\$0.37 or \$0.18½					5	6					
3/\$0.56 or \$0.28							1	1	1		
\$0.19	7	4	2	3	21	37	9				
2/\$0.39 or \$0.19½							7	6	8	8	8
\$0.20		4	4	4	4	4	32	44	43	44	43
\$0.21	4				1		2				1
\$0.23					1						
Total	52	52	52	52	52	52	52	52	52	52	52

Source: Bureau of Labor Statistics.

TABLE 9.—*Retail prices of a nationally advertised shaving article, March 1935–March 1939*

NUMBER OF INDEPENDENT STORES SELLING AT DESIGNATED PRICES

Retail Price	March 1935	July 1935	October 1935	January 1936	July 1936	December 1936	June 1937	December 1937	June 1938	December 1938	March 1939
\$0.14									1		
\$0.16	1	1	1	1						1	
\$0.19	3	3	3	3	1	1	1				
\$0.21				1							
\$0.23	1	2	2	1	1	1	2				
\$0.24								1	1		
\$0.25	53	52	52	52	56	56	55	57	56	57	58
Total..	58	58	58	58	58	58	58	58	58	58	58

NUMBER OF CHAIN STORES SELLING AT DESIGNATED PRICES

Retail Price	March 1935	July 1935	October 1935	January 1936	July 1936	December 1936	June 1937	December 1937	June 1938	December 1938	March 1939
\$0.14											
\$0.16	1	2	1		1						
\$0.17	1	1	1		1						
\$0.18				1							
\$0.19	6	7	8	7	3	1	1	1			
\$0.21						6	2	1			
\$0.23											
\$0.24							2	4	4	4	4
\$0.25	44	42	42	44	47	45	47	46	48	48	48
Total..	52	52	52	52	52	52	52	52	52	52	52

Source: Bureau of Labor Statistics.

TABLE 10.—*Retail prices of a nationally advertised dentifrice, March 1935–March 1939*

NUMBER OF INDEPENDENT STORES REPORTING SPECIFIED PRICES

Retail Price	March 1935	July 1935	October 1935	January 1936	July 1936	December 1936	June 1937	December 1937	June 1938	December 1938	March 1939
\$0.30											
\$0.31	4	4	3	2	1	1	1				
\$0.33					2	3	4	5	6	6	6
\$0.34				1	1	2	2	2	1	1	1
\$0.35									1	1	1
\$0.36								1	1	1	1
\$0.38	1	2	1	2	2	2					
\$0.39	3	2	3	3	3	2	2	1			
\$0.41	1	1	1	1		1					
Total..	9	9	9	9	9	9	9	9	9	9	9

NUMBER OF CHAIN STORES REPORTING SPECIFIED PRICES

Retail Price	March 1935	July 1935	October 1935	January 1936	July 1936	December 1936	June 1937	December 1937	June 1938	December 1938	March 1939
\$0.24		1	2	1							
\$0.27		1	1								
\$0.28		1	1								
\$0.29						1					
\$0.30		1									
\$0.31	9	6	6		2						
\$0.33				3	8	14	11	13	18	19	19
\$0.34	3	3	8	10	7	4	5	3	1		
\$0.35		1			1		1	1			
\$0.36	1										
\$0.37					1		1	1			
\$0.38	4	5		4							
\$0.39	2		1	1			1	1			
Total..	19	19	19	19	19	19	19	19	19	19	19

Source: Bureau of Labor Statistics.

TABLE 11.—*Retail prices of a nationally advertised liquid laxative, March 1935–March 1939*

NUMBER OF INDEPENDENT STORES REPORTING SPECIFIED PRICES

Retail Price	March 1935	July 1935	October 1935	January 1936	July 1936	December 1936	June 1937	December 1937	June 1938	December 1938	March 1939
\$0.27											
\$0.28											
\$0.29	3	3	2						2	3	2
\$0.30		1	1	1	1	1	1	1			
\$0.31											
\$0.32											
\$0.33			1	1	1	1	1	1	1	1	1
\$0.34	2	3	2	4	6	6	6	5	4	3	4
\$0.35	1	1							1	1	1
\$0.36	1	1									
\$0.37	1	1	1	1	1	1	1	1			
\$0.39	16	15	17	16	17	15	16	17	18	18	19
\$0.40	1		1	1	1	1	1	1			
\$0.43	1	1	1	1	1	2	1	1	1	1	
\$0.44											
\$0.45	1	2	1	1	1	1				1	1
\$0.48	1	1	1	1	1	1	1	1	1	1	1
\$0.50	3	2	2	2	1	2	3	3	3	2	2
Total	31	31	31	31	31	31	31	31	31	31	31

NUMBER OF CHAIN STORES REPORTING SPECIFIED PRICES

Retail Price	March 1935	July 1935	October 1935	January 1936	July 1936	December 1936	June 1937	December 1937	June 1938	December 1938	March 1939
\$0.27			1								
\$0.28	1	1	1			1			1		
\$0.29	3	4	2	2	2	1	2	2	1	2	1
\$0.30											
\$0.31	1	1	2	1					1	1	1
\$0.32			2	1							
\$0.33				1	2	2	2	1	1	1	1
\$0.34	7	6	5	8	9	9	9	8	8	8	8
\$0.35											
\$0.36	2	2	1	1	1	1	1	2	1	1	1
\$0.37				1	1	1	1	2	2	2	2
\$0.39	5	6	5	5	4	4	4	4	5	5	5
\$0.40											
\$0.43											
\$0.44	1		1		1	1	1	1			
\$0.45											
\$0.48											
\$0.50											
Total	20	20	20	20	20	20	20	20	20	20	20

Source: Bureau of Labor Statistics.

A somewhat similar comparison is indicated for the other price maintained products shown in tables 8, 9, and 10. Before the advent of price maintenance, price cutting was more pronounced among the chains than among the independents; after minimum prices were prescribed, practically all chains adhered to these minima, while a few independents continued to quote prices above these minima. In the case of the shaving article shown in table 9, all independent stores charged the full list price even in New York where the minimum was 1 cent lower, but all the chain stores in New York charged the reduced price. No minimum price was fixed by contract for the nationally advertised liquid laxative shown in table 11, except in California. As mentioned earlier, the full list price of this product is 50 cents and the California minimum 39 cents. Four independents but no chain stores charged more than this California minimum. More than half of the independent stores quoted 39 cents. while three-fourths of the chains charged less than 39 cents.

There is much less difference evident in the case of the nonadvertised laxative shown in table 12. The price distribution is much the same for both chain stores and independents.

TABLE 12.—*Retail prices of a standard liquid laxative, July 1936–March 1939*

NUMBER OF INDEPENDENT STORES REPORTING SPECIFIED PRICES

Retail price	July 1936	December 1936	June 1937	December 1937	June 1938	December 1938	March 1939
\$0.15-----	3	3	3	3	3	3	3
\$0.19-----	1	1	2	2	2	2	2
\$0.20-----	6	6	5	6	6	6	6
\$0.23-----	1		1	1			
\$0.24-----				1			
\$0.25-----	31	32	31	29	31	31	31
\$0.35-----	1	1	1	1	1	1	1
Total-----	43	43	43	43	43	43	43

NUMBER OF CHAIN STORES REPORTING SPECIFIED PRICES

Retail price	July 1936	December 1936	June 1937	December 1937	June 1938	December 1938	March 1939
\$0.15-----	5	3	3	3	4	4	4
\$0.17-----	3	3	3	3	3	3	3
\$0.19-----	4	6	5	4	2	2	2
\$0.20-----	1	2	3	4	5	5	5
\$0.21-----				1	1	1	1
\$0.23-----	4	5	4	2	2	2	3
\$0.25-----	20	18	18	21	21	22	22
\$0.30-----	3	3	4	3	3	2	1
\$0.35-----	1	1	1				
Total-----	41	41	41	41	41	41	41

Source: Bureau of Labor Statistics.

Retail prices as reported by the Marketing Laws Survey.—The relatively small number of drug stores reporting to the Bureau of Labor Statistics limits the degree to which the foregoing comparisons can be considered generally representative, particularly for independent outlets. Some light may be thrown upon this question by the results of a field study conducted by the more comprehensive Marketing Laws Survey of the Works Progress Administration in Columbus, Ohio, during August 1938. Although this was confined to one city, it covered many more drug stores than the Bureau of Labor Statistics reporting list.

The results of this survey show that prices charged by independent Columbus drug stores for these products were somewhat higher than those of independent stores reporting to the Bureau of Labor Statistics and that the foregoing analysis, confined largely to stores of at least moderate size located near convenient transportation facilities, may indicate a greater degree of price uniformity than, in fact, exists. The only exception was the case of the shaving article (table 15), where the minimum price and the list price coincided. This is shown in tables 13 to 17 inclusive, which compare the distribution of prices as reported to the Bureau of Labor Statistics during June 1938 with those obtained by the Marketing Laws Survey in Columbus for the first five of the products which have been described. (The only item omitted was the standard liquid laxative shown in tables 6 and 12.) It is believed that the group of stores visited during the course of the Marketing Laws Survey was adequately representative of all types of independent retail drug stores in Columbus. However, the number of chain store quotations obtained was less adequate.

In the case of the analgesic tablets for example, (table 13), 74 percent of the Columbus stores charged the full list price and only 10 percent charged the minimum as compared with 55 and 33 percent respectively for the Bureau of Labor Statistics group. In the case of the drug

sundry (table 14), only three of the 55 independent stores reported prices above the minimum to the Bureau of Labor Statistics, while almost half of the Columbus stores charged more than the minimum; the highest price reported to the Bureau was 25 cents, while prices in Columbus ranged as high as 32 cents. Almost half the Columbus stores charged 39 cents for the dentifrice (table 16), a price higher than any reported to the Bureau of Labor Statistics for the same period. In the case of the liquid laxative (table 17), the same contrast is evident; the price most commonly reported was 45 cents, while that most frequently recorded by the Bureau of Labor Statistics was 39 cents.

The same general situation holds for a widely advertised proprietary cold remedy (table 18). Bureau of Labor Statistics data for this article were available only for June 1939. The full list price was 35 cents and the minimum fair-trade price was 27 cents. Eighty-four percent of the chain outlets reporting to the Bureau of Labor Statistics quoted the minimum price with the remainder evenly divided below and above the minimum. (The prices below the minimum were reported for States in which there was no price-maintenance legislation.)

TABLE 13.—*Retail prices of a nationally advertised analgesic tablet*

Price	Chain drug stores		Independent drug stores	
	B. L. S. data 32 cities	W. P. A. data Columbus, Ohio	B. L. S. data 32 cities	W. P. A. data Columbus, Ohio
\$0.12.....	26	4	16	5
2/\$0.25.....			1	
\$0.13.....	1	1	4	5
\$0.14.....			1	3
\$0.15.....	3		27	37
Total.....	30	5	49	50

Source: Bureau of Labor Statistics (June 1938) and Marketing Law Survey, W. P. A. project, Columbus, Ohio (August 1938).

TABLE 14.—*Retail prices of a nationally advertised drug sundry*

Price	Chain drug stores		Independent drug stores	
	B. L. S. data 32 cities	W. P. A. data Columbus, Ohio	B. L. S. data 32 cities	W. P. A. data Columbus Ohio
\$0.18.....			1	
3/\$0.56.....	1			
\$0.19.....			1	1
2/\$0.39.....	8	2		
\$0.20.....	43	4	50	12
\$0.21.....			1	2
\$0.23.....				4
\$0.24.....			1	2
\$0.25.....			1	
\$0.29.....				1
\$0.30.....				1
\$0.32.....				1
Total.....	52	6	55	24

Source: Bureau of Labor Statistics (June 1938) and Marketing Law Survey, W. P. A. project, Columbus, Ohio (August 1938).

TABLE 15.—*Retail prices of a nationally advertised shaving article*

Price	Chain drug stores		Independent drug stores	
	B. L. S. data 32 cities	W. P. A. data Columbus, Ohio	B. L. S. data 32 cities	W. P. A. data Columbus Ohio
\$0.14.....			1	
\$0.24.....	4		1	
\$0.25.....	48	3	56	16
Total.....	52	3	58	16

Source: Bureau of Labor Statistics (June 1938) and Marketing Law Survey, W. P. A. project, Columbus, Ohio (August 1938).

TABLE 16.—*Retail prices of a nationally advertised dentifrice*

Price	Chain drug stores		Independent drug stores	
	B. L. S. data, 32 cities	W. P. A. data, Columbus, Ohio	B. L. S. data, 32 cities	W. P. A. data, Columbus, Ohio
\$0.33.....	18	2	6	7
\$0.34.....	1		1	
\$0.35.....			1	1
\$0.36.....			1	1
\$0.39.....				7
Total.....	19	2	9	16

Source: Bureau of Labor Statistics (June 1938) and Marketing Law Survey, W. P. A. project, Columbus, Ohio (August 1938).

TABLE 17.—*Retail prices of a nationally advertised liquid laxative*

Price	Chain drug stores		Independent drug stores	
	B. L. S. data, 32 cities	W. P. A. data, Columbus, Ohio	B. L. S. data, 32 cities	W. P. A. data, Columbus, Ohio
\$0.28.....	1			
\$0.29.....	1		2	
\$0.31.....	1			
\$0.33.....	1	1	1	
\$0.34.....	8	2	4	
\$0.35.....			1	
\$0.36.....	1			
\$0.37.....	2			1
\$0.39.....	5	3	18	15
\$0.41.....				1
\$0.43.....			1	5
\$0.45.....				20
\$0.47.....				4
\$0.48.....			1	
\$0.50.....			3	4
Total.....	20	6	21	50

Source: Bureau of Labor Statistics (June 1938) and Marketing Law Survey, W. P. A. project, Columbus, Ohio (August 1938).

TABLE 18.—*Retail prices of a nationally advertised cold remedy*

Price	Chain drug stores		Independent drug stores	
	B. L. S. data, 32 cities	W. P. A. data, Columbus, Ohio	B. L. S. data, 32 cities	W. P. A. data, Columbus, Ohio
\$0.24.....	3			
\$0.25.....	1			
\$0.27.....	42	2	26	11
\$0.28.....				
\$0.29.....	3	2	8	22
\$0.30.....			1	11
\$0.31.....	1		3	1
\$0.32.....				3
\$0.33.....			2	4
\$0.35.....			1	3
Total.....	50	4	42	55

Source: Bureau of Labor Statistics (June 1938) and Marketing Law Survey, W. P. A. project, Columbus, Ohio (August 1938):

Of the independent drug stores reporting to the Bureau, 62 percent were at the minimum and the remainder were above the minimum. Independent drug stores in Columbus, Ohio, according to the W. P. A. Survey, showed a tendency to charge somewhat higher prices than did independent drug stores in the Bureau of Labor Statistics reporting group. Eighty percent quoted more than the minimum and the price most frequently charged was 29 cents rather than 27 cents.

The small number of quotations available for chain drug stores in Columbus precludes any adequate comparison with prices reported to the Bureau of Labor Statistics. To the extent to which data are available, however, the distribution of prices does not differ greatly. Moreover, since prices reported by chain stores to the Bureau of Labor Statistics are often representative of prices charged by all outlets of the given chain in each locality, it seems probable that chain-store prices reported to the Bureau are fairly representative of general practice.

Apparently, therefore, prices reported to the Bureau of Labor Statistics by independent retail drug outlets are somewhat lower than is true for independent drug stores generally. This is probably due to the fact that small independent druggists, and especially those who are not located adjacent to good transportation facilities, charge somewhat higher prices for nationally advertised merchandise than do the larger and more conveniently located stores from which the Bureau compiles data. Consequently, the difference between prices charged by chain stores and by independent drug stores generally is probably somewhat wider than indicated in tables 7 to 12 above.

ADVERTISED AND SUBSTITUTE BRANDS

The importance of brand names and advertising in influencing the prices of products handled by the drug trade has already been discussed.⁴ In general, widely advertised products command a substantial premium over less well-known or unbranded commodities of the same general kind; frequently these differences exist when the branded

⁴ See *supra*, pp. 80-83.

and unbranded commodities are identical except in name. Particularly wide price differentials are encountered between articles sold under proprietary names and the same articles bearing their standard chemical designations. Part I of this volume includes a table showing that for 11 standard drug products the aggregate cost per ounce totaled \$28.95 under the proprietary designations and only \$4.59 when sold under their standard chemical names.⁵

The existence of these wide price differentials may also have furnished retail druggists with an additional means of persuading drug manufacturers to issue price maintenance contracts guaranteeing margins which the retailers deem satisfactory. An example of this sort of argument is described by Ewald T. Grether in a recent book on the subject:⁶

Added to the threatened refusal to cooperate with manufacturers who did not meet the demands of retailers, there was a growing complaint that the pharmacists had allowed too much manufacturing to leave their own establishments. John Culley, in a lengthy paper presented before the Northern California Retail Druggists' Association, November 2, 1935, appealed to pharmacists to return to their former professional status. He contended that retail druggists "are tired of acting as a manufacturer's distributor without pay and many times paying for the privilege." He pointed out that as a result of the increase in trade-marked proprietary products the retail druggist:

"* * * must increase his investment without any additional output. He is obliged to keep in stock a dozen or more varieties of trade-marked brands of proprietary remedies having a similar fanciful coined name, all containing the same ingredients, claiming as having the same extravagant medical virtues and all outrageously overpriced, all of which is detrimental to the interests of the pharmacist, the physician, and to the public."

He argued that if it is ethical for manufacturers to duplicate and imitate each other's products, it is equally so for the pharmacist, and strongly advised him to manufacture and introduce many of his own products, thus giving him both a manufacturing and retailing profit. The paper concluded with the following statement and a number of examples to illustrate his contention.

"For your information and convenience I will quote a few cost prices on some types of preparations that can be easily and quickly made by the retail pharmacist and quote also the cost price he will have to pay for a similar product from the large manufacturer. It is interesting to note that the New Jersey State Pharmaceutical Association, by means of a standing professional committee recognizes the facts expressed in this paper and have selected and placed before their members many formulae for remedies that are similar to well known but drastically overpriced proprietary trade-marked articles. I have attached to this paper several formulae with working directions some of which are those recommended by the N. F. Ph. A. and will be pleased to furnish them to those interested:

Elixir amidopyrine:		
Cost to buy.....	1000 cc..	\$5. 44
Cost to make.....	do.....	1. 25
Elixir phenobarbital:		
Cost to buy the proprietary.....	pint..	2. 50
Cost to make with the USP chemical.....	do.....	. 35
Syrup potassium guaiacol sulphate:		
Cost to buy.....	1000 cc..	3. 00
Cost to make.....	do.....	. 80
Ephedrine inhalant:		
Cost to buy.....	do.....	17. 00
Cost to make.....	do.....	. 80
Ephedrine inhalant compound:		
Cost to buy.....	do.....	17. 00
Cost to make.....	do.....	1. 35

⁵ See supra, p. 81.

⁶ Price Control Under Fair Trade Legislation, by Ewald T. Grether, pp. 94-96.

Ephedrine solution 3 percent:		
Cost to buy	pint	4. 80
Cost to make	do	1. 25
Solution ephedrine and epinephrine:		
Cost to buy	1000 cc	28. 00
Cost to make	do	3. 80
Capsules ephedrine sulph. $\frac{3}{8}$ grain each:		
Cost to buy	100	2. 12
Cost to make	do	. 34
Capsules ephedrine sulph. $\frac{3}{8}$ grain:		
Cost to buy	do	3. 50
Cost to make	do	. 60
The following represent just a few of the USP and NF preparations that can be made much cheaper and easier than to buy ready-made:		
Brown mixture:		
Cost to buy	pint	\$0. 55
Cost to make	do	. 31
Rhubarb and soda mixture:		
Cost to buy	do	. 55
Cost to make	do	. 30
Elixir sodium bromide:		
Cost to buy	do	. 70
Cost to make	do	. 27
Elixir potassium bromide:		
Cost to buy	do	. 80
Cost to make	do	. 30
Elixir terpin hydrate:		
Cost to buy	gallon	7. 68
Cost to make	do	3. 36
Elixir terpin hydrate and codeine:		
Cost to buy	do	8. 50
Cost to make	do	5. 36
Elixir simple:		
Cost to buy	do	5. 40
Cost to make	do	2. 10
Syrup hydriodic acid:		
Cost to buy	pint	. 78
Cost to make	do	. 18
Syrup wild cherry:		
Cost to buy or make from Fluidextr	do	. 45
Cost to make	do	. 20
Dobells solution:		
Cost to buy	gallon	1. 25
Cost to make	do	. 25
Calamine lotion:		
Cost to buy	do	1. 50
Cost to make	do	. 73
Ointment white precipitate:		
Cost to buy	pound	1. 26
Cost to make	do	. 60
Ointment sulphur:		
Cost to buy	do	. 67
Cost to make	do	. 35
Fehlings solution:		
Copper A:		
Cost to buy	do	1. 00
Cost to make	do	. 10
Alkaline B:		
Cost to buy	do	1. 00
Cost to make	do	. 40
Benedicts solution:		
Cost to buy	pint	. 60
Cost to make	do	. 25

Price spreads between different brands of articles sold under the same generic name (e. g., aspirin, toothpaste, codliver oil) are usually not quite as wide as those between drugs sold under their chemical and their proprietary designations, but they may still be very considerable. For example, a nationally advertised brand of aspirin sells at the minimum fair trade price of 59 cents per 100 tablets; other advertised brands of aspirin commonly sell for 39 cents per 100 tablets, and private or unadvertised brands may be obtained regularly for 19 cents and sometimes for as little as 8 cents. One chain store has two private brands of aspirin, both presumably identical except for name; yet one is sold for 39 cents per 100 tablets and the other for 19 cents per 100. In general, clerks in this chain do not offer the 19-cent article except upon demand and even then they have been known to sell it reluctantly. The cheaper product is what is usually known in the trade as a "fighting" brand: that is, it is offered to meet the price competition of cut-rate outlets.

Ordinarily the Retail Price Division of the Bureau of Labor Statistics collects prices only for the brand most commonly sold in each store. During March and June 1939, however, agents were instructed to collect prices not only upon the best selling brand—usually a nationally advertised product—but also for substitute or private brands of the same commodity. Tables 19 to 26 inclusive compare the prices quoted for advertised and substitute brands as of June 1939.

TABLE 19.—*Retail prices of analgesic tablets, nationally advertised brand and substitute brands, in chain and independent stores, June 1939*

Retail price	Number of stores reporting specified prices					
	Total		Chain stores		Independent stores	
	Nationally advertised brand	Substitute brands	Nationally advertised brand	Substitute brands	Nationally advertised brand	Substitute brands
\$0.02.....		1		1		
\$0.03.....		2		2		
\$0.05.....		1		1		
\$0.07.....		1		1		
\$0.08.....		1		1		
\$0.09.....		4		3		1
\$0.10.....		103		50		53
\$0.12.....	77	1	55	1	22	
2/\$0.25.....	1				1	
\$0.13.....	6		1		5	
\$0.14.....	3		2		1	
\$0.15.....	27		2		25	
Total.....	114	114	60	60	54	54

Source: Bureau of Labor Statistics.

TABLE 20.—*Retail prices of drug sundry, nationally advertised brand and substitute brands, in chain and independent stores, June 1939*

Retail price	Number of stores reporting specified prices					
	Total		Chain stores		Independent stores	
	Nationally advertised brand	Substitute brands	Nationally advertised brand	Substitute brands	Nationally advertised brand	Substitute brands
\$0.09.....		6		5		1
\$0.11.....		3		3		
\$0.12.....		1		1		
2/\$0.25.....		3		2		1
\$0.13.....		3		2		1
2/\$0.27.....		2		2		
\$0.14.....		2		2		
\$0.15.....		15		5		10
2/\$0.31.....		1		1		
\$0.16.....		5		4		1
\$0.17.....		24		17		7
\$0.18.....	1	2		1	1	1
\$0.19.....		9		4		5
2/\$0.39.....	6		5		1	
\$0.20.....	75	6	47	3	28	3
Total.....	82	82	52	52	30	30

Source: Bureau of Labor Statistics.

TABLE 21.—*Retail prices of shaving article, nationally advertised brand and substitute brands, in chain and independent stores, June 1939*

Retail price	Number of stores reporting specified prices					
	Total		Chain stores		Independent stores	
	Nationally advertised brand	Substitute brands	Nationally advertised brand	Substitute brands	Nationally advertised brand	Substitute brands
\$0.10.....		25		5		20
\$0.12.....		2		1		1
\$0.15.....		4		3		1
\$0.17.....		2		2		
\$0.19.....		13		9		4
\$0.20.....		1				1
\$0.21.....	2		2			
\$0.23.....		6		6		
\$0.24.....	4		2		2	
\$0.25.....	63	14	32	9	31	5
\$0.35.....		1				1
\$0.39.....		1		1		
Total.....	69	69	36	36	33	33

Source: Bureau of Labor Statistics.

TABLE 22.—*Retail prices of liquid laxative "A," nationally advertised brand and substitute brands, in chain and independent stores, June 1939*

Price	Number of stores reporting specified prices					
	Total		Chain stores		Independent stores	
	Nationally advertised brand	Substitute brands	Nationally advertised brand	Substitute brands	Nationally advertised brand	Substitute brands
\$0.11.....		1		1		1
\$0.19.....		2		1		1
\$0.23.....		2		1		1
\$0.24.....	1				1	
\$0.25.....	1	4	1	1		3
\$0.27.....		3		3		
\$0.28.....	2		1		1	
\$0.29.....	11	49	7	35	4	14
\$0.30.....	1		1			
\$0.31.....	4	1	3		1	1
\$0.32.....	2	1	1	1	1	
\$0.33.....	4	14	3	10	1	4
\$0.34.....	31	2	23	1	8	1
\$0.35.....	2	1	1		1	1
\$0.36.....	1		1			
\$0.37.....	5	2	4	1	1	1
\$0.39.....	35	20	15	6	20	14
\$0.40.....		1				1
\$0.43.....	1				1	
\$0.45.....	1				1	
\$0.50.....	1				1	
Total.....	103	103	61	61	42	42

Source: Bureau of Labor Statistics.

TABLE 23.—*Retail prices of cold remedy, nationally advertised brand and substitute brands, in chain and independent stores, June 1939*

Price	Number of stores reporting specified prices					
	Total		Chain stores		Independent stores	
	Nationally advertised brand	Substitute brands	Nationally advertised brand	Substitute brands	Nationally advertised brand	Substitute brands
\$0.19.....		3		2		1
\$0.21.....		1		1		
\$0.23.....		20		18		2
\$0.24.....	3	1	3	1		
\$0.25.....	1	59	1	24		35
\$0.27.....	68	1	42		26	1
\$0.28.....	1				1	
\$0.29.....	11	4	3	2	8	2
\$0.30.....	1				1	
\$0.31.....	4	1	1	1	3	
\$0.33.....	2	1			2	1
\$0.35.....	1				1	
\$0.50.....		1		1		
Total.....	92	92	50	50	42	42

Source: Bureau of Labor Statistics.

TABLE 24.—*Retail prices of vitamin product, nationally advertised brand and substitute brands, in chain and independent stores, June 1939*

Price	Number of stores reporting specified prices					
	Total		Chain stores		Independent stores	
	Nationally advertised brand	Substitute brands	Nationally advertised brand	Substitute brands	Nationally advertised brand	Substitute brands
\$0.23.....		1		1		
\$0.49.....		1		1		
\$0.59.....		8		3		5
\$0.65.....		5		4		1
\$0.69.....		8		6		2
\$0.75.....		2				2
\$0.79.....	57	20	36	16	21	4
\$0.80.....		1				1
\$0.89.....	3	9		3	3	6
\$0.98.....		4		2		2
\$0.99.....		1				1
Total.....	60	60	36	36	24	24

Source: Bureau of Labor Statistics.

TABLE 25.—*Retail prices of liquid laxative "B", nationally advertised brand and substitute brands, in chain and independent stores, June 1939*

Retail price	Number of stores reporting specified prices					
	Total		Chain stores		Independent stores	
	Nationally advertised brand	Substitute brands	Nationally advertised brand	Substitute brands	Nationally advertised brand	Substitute brands
\$0.10.....		1				1
\$0.15.....		7		5		2
\$0.17.....		2		2		
\$0.18.....		1		1		
\$0.19.....		5		2		3
\$0.20.....		5		4		1
\$0.21.....		1		1		
\$0.23.....	41	4	24	3	17	1
\$0.25.....	21	37	9	16	12	21
\$0.26.....	1		1			
Total.....	63	63	34	34	29	29

Source: Bureau of Labor Statistics.

TABLE 26.—*Retail prices of oral antiseptic, nationally advertised brand and substitute brands, in chain and independent stores, June 1939*

Retail price	Number of stores reporting specified prices					
	Total		Chain stores		Independent stores	
	Nationally advertised brand	Substitute brands	Nationally advertised brand	Substitute brands	Nationally advertised brand	Substitute brands
\$9.19.....		3		2		1
\$9.25.....		1				1
\$9.29.....		6		2		4
\$9.32.....		1		1		
\$9.33.....		1				1
\$9.37.....		1				1
\$9.39.....		20		6		14
\$9.40.....		2		2		
\$9.44.....		1		1		
\$9.45.....		1		1		
\$9.48.....		1		1		
\$9.49.....		67		49		18
\$9.50.....		5				5
\$9.59.....	112	1	66	1	46	
\$9.69.....	2	1			2	1
\$9.88.....		1				1
\$9.89.....		1				1
Total.....	114	114	66	66	48	48

Source: Bureau of Labor Statistics.

Although the nationally advertised merchandise and the private brands were in each case very similar, it should not be assumed that there were no significant differences in quality which might account in whole or in part for the price differentials. The analgesic tablets, shown in table 19, and the liquid laxative, in table 22 are both standard commodities described in the pharmacopoeia but the other items tabulated were less uniform in character.

In the case of the analgesic tablets (table 19), the price most commonly quoted for substitute brands both by chain stores and independents was 10 cents, in contrast to the 12-cent minimum price fixed for the nationally advertised commodity. Nine of the 60 chain stores charged less than 10 cents for their substitute brands; in one case the quotation was as low as 2 cents for a dozen tablets. Independent stores, on the other hand, quoted the 10-cent price almost uniformly and only one of the 54 independent outlets went below this level.

The remaining tables in this group are generally similar in character. In the case of the drug sundry, the typical price (the modal price) for the substitute brands was 17 cents as compared with the 19½ cent and 20 cent minima established for the advertised variety. The price most commonly quoted for the unadvertised brand of the shaving article was 10 cents, as compared with 25 cents for the nationally known brand. Differences of this kind are not merely the results of resale price maintenance; the price most commonly charged for 16 ounces of the unadvertised brands of liquid laxative was about 25 percent less than the 39-cent level at which the nationally advertised brand is generally quoted. (See table 22.)

The remaining tables in this series tell a very similar story. In each case the range of prices as well as the price most frequently

charged is materially higher for the nationally advertised than for the substitute brand. However, since the data relate to products for which quality is quite variable, the significance of these comparisons should not be exaggerated. This should not be taken to mean that the nationally advertised item is necessarily superior in quality to that of the unbranded product, but simply that the articles are not in all respects identical in content or utility, and that technical analysis which is beyond the scope of this discussion would be needed in order to appraise the full significance of price differentials. What these figures do emphasize is the difficulty confronting the consumer in choosing intelligently among rival commodities of this character and the virtual impossibility of translating differences of price into terms of intrinsic utility.

It may also be observed that chain stores report prices for substitute brands more frequently than do independent stores. This is only natural because the promotion of a private brand often requires resources beyond the command of the individual druggist.

An additional comparison may be made of the prices and price trends of nationally advertised and private label merchandise quoted by mail order houses in their catalogs. Tables 27 to 30 are for the same products as those shown in tables 1, 2, 3, and 4 respectively, except that the analgesic tablets (table 27) are quoted in units of 100, rather than per dozen.

TABLE 27.—*Retail prices of analgesic tablets, nationally advertised brand and distributors' brands, charged by two mail-order houses*

Date of catalog	Retail prices listed for designated periods				
	Mail-order house "A"		Mail-order house "B"		
	Nationally advertised brand	Distributor's brand	Nationally advertised brand	Distributor's primary brand	Distributor's secondary brand
1929—spring and summer.....	\$0. 98	\$0. 59			
1929-30—fall and winter.....	. 97	. 59			
1930—spring and summer.....	. 98	. 61			
1930-31—fall and winter.....	. 98	. 58			
1931—spring and summer.....	. 98	. 58			
1931-32—fall and winter.....	. 98	. 58			
1932—spring and summer.....	. 95	. 58	\$0. 95	\$0. 58	
1932-33—fall and winter.....	. 95	. 58			
1933—spring and summer.....	. 73	. 49	. 73	. 49	
1933-34—fall and winter.....	. 69	. 44	. 69	. 44	
1934—spring and summer.....	. 69	. 44	. 69	. 44	
1934-35—fall and winter.....	. 59	. 38	. 59	. 38	\$0. 28
1935—spring and summer.....	. 59	. 38	. 59	1. 38	. 19
1935-36—fall and winter.....	. 44	. 19	. 44	1. 38	. 19
1936—spring and summer.....	. 49	. 19	. 49	1. 38	. 19
1936-37—fall and winter.....	. 49	. 19	. 59	1. 38	. 19
1937—spring and summer.....	. 59	. 19	. 59	. 29	. 19
1937-38—fall and winter.....	. 59	. 19	. 59	. 29	. 19
1938—spring and summer.....	. 59	. 17	. 59	. 29	. 18
1938-39—fall and winter.....	. 59	. 16	. 59	. 29	. 16
1939—spring and summer.....	. 59	. 16	. 59	. 29	. 16
1939-40—fall and winter.....	. 59	. 16	. 59	. 29	. 16
1940—spring and summer.....	. 59	. 16	. 59	. 29	. 16

¹ Tin of 12 free.

Source: Mail-order catalogs.

TABLE 28.—*Retail prices of a drug sundry, nationally advertised brand and distributors' brands, charged by two mail-order houses*

Date of catalog	Retail prices listed for designated periods			
	Mail-order house "A"		Mail-order house "B"	
	Nationally advertised brand	Distributor's brand	Nationally advertised brand	Distributor's brand
1929—spring and summer	Each \$0.37	Each \$0.27		
1929-30—fall and winter	do	Each \$0.28		
1930—spring and summer	Each \$0.39	Each \$0.27		
1930-31—fall and winter	Each \$0.35	Each \$0.29		
1931—spring and summer	do	do		
1931-32—fall and winter	do	do		
1932—spring and summer	3 for \$0.78	3 for \$0.59	3 for \$0.70	5 for \$0.98.
1932-33—fall and winter	3 for \$0.79	3 for \$0.54		
1933—spring and summer	3 for \$0.63	3 for \$0.39	3 for \$0.79	3 for \$0.48.
1933-34—fall and winter	3 for \$0.59	do	3 for \$0.59	3 for \$0.45.
1934—spring and summer	3 for \$0.54	3 for \$0.44	3 for \$0.54	Do.
1934-35—fall and winter	3 for \$0.47	3 for \$0.42	3 for \$0.47	3 for \$0.39.
1935—spring and summer	3 for \$0.49	3 for \$0.39	3 for \$0.49	3 for \$0.25.
1935-36—fall and winter	2 for \$0.35	2 for \$0.28	2 for \$0.35	2 for \$0.28.
1936—spring and summer	do	do	do	Do.
1936-37—fall and winter	do	do	do	Do.
1937—spring and summer	2 for \$0.37	do	2 for \$0.37	Do.
1937-38—fall and winter	2 for \$0.39	2 for \$0.29	2 for \$0.39	2 for \$0.29.
1938—spring and summer	do	2 for \$0.23	do	2 for \$0.28.
1938-39—fall and winter	do	2 for \$0.21	do	Do.
1939—spring and summer	do	2 for \$0.24	do	Do.
1939-40—fall and winter	do	2 for \$0.23	do	Do.
1940—spring and summer	do	2 for \$0.26	do	2 for \$0.29.

Source: Mail-order catalogs.

TABLE 29.—*Retail prices of liquid laxative "A," nationally advertised brand and distributors' brands, charged by 2 mail-order houses*

Date of catalog	Retail prices listed for designated periods				
	Mail-order house "A"		Mail-order house "B"		
	Nationally advertised brand	Distributor's brand	Nationally advertised brand	Distributor's primary brand	Distributor's secondary brand
1929—spring and summer	\$0.38				
1929-30—fall and winter	.38				
1930—spring and summer	.42				
1930-31—fall and winter	.39				
1931—spring and summer	.39				
1931-32—fall and winter	.39				
1932—spring and summer	.39		\$0.39		
1932-33—fall and winter	.39				
1933—spring and summer	.39	\$0.24	.39	\$0.31	
1933-34—fall and winter	.37	.22	.37	.28	
1934—spring and summer	.39	.29	.39	.29	
1934-35—fall and winter	.36	.24	.36	.29	\$0.24
1935—spring and summer	.36	.24	.36	.29	.24
1935-36—fall and winter	.29	.27	.29	.27	.19
1936—spring and summer	.29	.27	.29	.27	.23
1936-37—fall and winter	.29	.27	.29	.27	.23
1937—spring and summer	.29	.27	.29	.27	.23
1937-38—fall and winter	.34	.27	.34	.27	.23
1938—spring and summer	.34	.21	.34	.27	.23
1938-39—fall and winter	.34	.21	.34	.27	.21
1939—spring and summer	.34	.21	.34	.24	.21
1939-40—fall and winter	.34	.24	.34	.24	
1940—spring and summer	.34	.27	.34	.27	

Source: Mail-order catalogs.

TABLE 30.—*Retail prices of liquid laxative "B," nationally advertised brand and distributors' brands, charged by 2 mail-order houses*

Date of catalog	Retail prices listed for designated periods			
	Mail-order house "A"		Mail-order house "B"	
	Nationally advertised brand	Distributor's brand	Nationally advertised brand	Distributor's brand
1929—spring and summer.....		\$0. 25		
1929-30—fall and winter.....		. 25		
1930—spring and summer.....		. 29		
1930-31—fall and winter.....		. 31		
1931—spring and summer.....		. 31		
1931-32—fall and winter.....	\$0. 42	. 31		
1932—spring and summer.....	. 42	. 31	\$0. 42	\$0. 31
1932-33—fall and winter.....	. 42	. 31		
1933—spring and summer.....	. 42	. 31	. 42	. 31
1933-34—fall and winter.....	. 39	. 29	. 39	. 25
1934—spring and summer.....	. 39	. 31	. 39	. 31
1934-35—fall and winter.....	. 34	. 27	. 34	. 29
1935—spring and summer.....	. 34	. 27		. 27
1935-36—fall and winter.....	. 34	. 27		. 27
1936—spring and summer.....	. 34	. 29		. 29
1936-37—fall and winter.....	. 34	. 29		. 27
1937—spring and summer.....	. 34	. 29		. 29
1937-38—fall and winter.....	. 47	. 29		. 29
1938—spring and summer.....	. 47	. 21		. 29
1938-39—fall and winter.....		. 21		. 29
1939—spring and summer.....		. 21		. 29
1939-40—fall and winter.....		. 21		. 29
1940—spring and summer.....		. 23		. 29

Source: Mail-order catalogs.

In each case the items sold under the private label are materially cheaper than the nationally advertised brand. The contrast is particularly striking for the analgesic tablets which contain, as has been stated, the identical active ingredients. It is also noteworthy that the price of the private-label tablets has declined much more sharply since 1929 than has that of the nationally advertised item and that this difference in trend became particularly marked after the introduction of resale price maintenance.

Table 31 shows the relationship between the prices charged for a nationally advertised and a substitute brand of liquid laxative (the one shown in table 5 above) by individual stores. This product is the only one suitable for comparison of this kind because of the effect of resale price maintenance in limiting the price variability of the manufacturers' brands for all the other products which have been discussed. The nationally advertised brand is in a 12-ounce package, while substitute brands are quoted in 16-ounce quantities. This table indicates a wide diversity of practice between stores. For example, there are 15 chain stores quoting 39 cents for the nationally advertised brand; one of these offers a substitute for as little as 11 cents, and three charge the same price for the substitute brand as for the advertised product. Seventeen of the chain stores which quote a 34-cent price for the national brand, charge 29 cents for the substitute, but the other six charge prices ranging from 19 cents to 39 cents. Eight of the stores actually charge more for the substitute than for the advertised brand, but it should be remembered that the latter contains three-fourths of the quantity of the former. There is no apparent correlation between prices for the two varieties; thus it

happens that the lowest price reported for a substitute brand is by a store which charges the top price for the national brand.

Independent stores show a slightly greater correlation between prices for the national and the substitute brands. Stores charging low prices for the former usually also charge low prices for the latter and vice versa. In general, however, there is little uniformity of practice, and the price charged by a store for nationally advertised merchandise affords no guide to the prices at which substitute brands are offered.

TABLE 31.—*Retail prices of liquid laxative "A", nationally advertised and substitute brands, in chain and independent stores—June 1939*

CHAIN STORES

Retail prices for nationally advertised brand—12 ounces	Retail prices for substitute brands—16 ounce s											Total
	\$0.11	\$0.19	\$0.23	\$0.25	\$0.27	\$0.29	\$0.32	\$0.33	\$0.34	\$0.37	\$0.39	
\$0.39	1					8	1	1		1	3	15
\$0.37			1								1	4
\$0.36						1		2				1
\$0.35								1				1
\$0.34		1		1		17		2	1		1	23
\$0.33						3						3
\$0.32								1				1
\$0.31						2					1	3
\$0.30					1							1
\$0.29					2	3		2				7
\$0.28						1						1
\$0.25								1				1
Total...	1	1	1	1	3	35	1	10	1	1	6	61

INDEPENDENT STORES

Retail prices for nationally advertised brand—12 ounces	Retail prices for substitute brands—16 ounces											Total
	\$0.19	\$0.23	\$0.25	\$0.29	\$0.31	\$0.33	\$0.34	\$0.35	\$0.37	\$0.39	\$0.40	
\$0.50										1		1
\$0.45									1			1
\$0.43										1		1
\$0.39		1		7		2		1		9	1	21
\$0.37										1		1
\$0.35										1		1
\$0.34			1	4		1	1			1		8
\$0.33						1						1
\$0.32				1								1
\$0.31			1									1
\$0.29				2	1							3
\$0.28			1									1
\$0.24	1											1
Total...	1	1	3	14	1	4	1	1	1	14	1	42

Source: Bureau of Labor Statistics.

Substitute brands and resale price maintenance.—During the past few years, the relationship between nationally advertised merchandise and private label or substitute brands has been affected by the spread of resale price maintenance legislation. When minimum resale prices are established for manufacturers' advertised brands, it is evident that retailers who depend largely upon price appeal must shift their price-cutting emphasis to articles which are not subject to such

restrictions—either to their own private brands or to other kinds of products. Some of the larger distributors, who had always featured a policy of offering low prices, apparently seized the opportunity to stress the savings available to the consumer on purchases of their own brands. For example, a large New York City department store and some of the leading mail-order houses have published advertisements comparing the prices of nationally advertised products with those of their own brands, coupled with reports of analyses purporting to show that the two are, in fact, identical in quality. More recently this policy of comparative advertising has been somewhat modified, possibly because of pressure from the manufacturers of the nationally advertised articles.

On the other hand, there is also some evidence that the availability of wide guaranteed margins on nationally advertised price-maintained products has lessened the interest of some large distributors in pushing their own private brands. During September 1939, for example, the Nevins Drug Chain in Philadelphia announced a major reversal in sales policy and instructed its clerks to refrain from attempting to "switch" customers from nationally advertised brands to private brands. Thus, according to the *Drug Trade News* of September 25, 1939:

Because a month's test proved, statistically, that switching from nationally advertised brands to private brands does not pay, the Nevins Drug Co. of this city, operator of 63 stores in Pennsylvania, Maryland, and New Jersey, has just instituted an iron-bound policy rigorously prohibiting the practice of switching in its stores.

* * * * *

"Under our State fair-trade law," Mr. Sylk (a partner of the firm) also pointed out, "it does not pay us—and we imagine the same thing would hold true for others—to go to all the trouble of switching customers. Our present figures show conclusively that less profit is made today on private brand goods than on nationally advertised items. We find that, when switching is resorted to, there is an immediate reduction in sales volume."

Similar considerations apply even more forcibly to independent retailers. During the past few years retail trade associations and manufacturers of well-known brands have sponsored an annual "National Brands Week" featuring a concerted drive to sell widely advertised brands, particularly those which were selling under price maintenance contracts. The issues involved in this alliance are suggested in two articles which appeared simultaneously in the July 1939 issue of the *American Druggist*, a recognized organ of the drug trade.

The first of these articles described the results of a survey conducted by the students of Mississippi State College to determine the attitude of drug sales clerks toward advertised and substitute brands. Quoting from this article:⁷

Out of 568 retail salespersons in the drug field, only 187, or 33%, believe that nationally-advertised brands are worth their higher prices.

This was the outstanding fact brought to light by the marketing survey of students of Mississippi State College in one of their recent surveys. These students had been studying the attitudes of manufacturers, distributors, and consumers toward fair-trade laws, but could find little about the retail salesperson. So, an investigation was planned to find out just what this individual thinks about price differentials. After all, the sales clerk in the store is the salesperson who deals directly with the consumer.

⁷ *American Druggist*, July 1939, vol. C, No. 1, p. 40.

During the spring holidays, students went into 568 drug stores in 96 cities and towns. Mississippi localities dominated, yet seven other States were represented, Alabama, Louisiana, Tennessee, Georgia, Florida, Texas, and Arkansas. Of the 568 stores, 284 were independent and 284 were chain stores.

Upon entering a store, each student established the fact, in conversation with a salesperson, that a price differential existed between some nationally advertised brand and a lesser-known brand (private, regional, or nonadvertised). Products compared were always of identical quantity.

The student then asked the sales clerk in a single question, using these exact words, "Is X (the nationally advertised brand) worth the higher price?"

In the following tabulations, "No" means that the salesperson said the nationally advertised item was not worth the higher price, but offered no explanation or amplification. The second group, "No—advertising," covers answers in which the clerk said that advertising expenditures caused the nationally known products to be higher priced. "No—quality same" needs no explanation. The fourth group, "No—container" consists of replies that attributed the higher price of the nationally advertised brand to a container. The final negative group is made up of answers that side-stepped the question.

Affirmative answers are of two types. "Yes" means that the clerks said merely that the nationally advertised brand was worth the higher price. Answers which contained justifications for higher prices were put in the "Yes" group.

This listing is for 568 replies		Independent and chain answers split this way			Negative replies for each of 6 products mentioned in survey		
Answer	Number of replies	Answer	Independent	Chain	Item	Negative replies from—	
						Independent	Chain
						Percent	Percent
"No"-----	110	"No"-----	49	61	Aspirin-----	53	84
"No" (advertising).-----	85	"No" (advertising).-----	41	44	Milk of magnesia.-----	82	87
"No" (quality same).-----	139	"No" (quality same).-----	59	80	Mouthwash-----	73	69
"No" (container).-----	2	"No" (container).-----	-----	2	Shaving cream-----	44	76
Evasive-----	45	Evasive-----	21	24	Soap-----	50	55
					Toothpaste-----	64	75
Total "No"-----	381	Total "No"-----	170	211			
"Yes"-----	64	"Yes"-----	43	21			
"Yes" (quality).-----	123	"Yes" (quality).-----	71	52			
Total "Yes"-----	187	Total "Yes"-----	114	73			
Total-----	568	Total-----	284	284			

The second article was an editorial comment upon the situation disclosed in the survey.

It is a startling and unexpected peril to the cause of fair trade that Dr. A. C. Kirkpatrick, assistant professor of business administration at Mississippi State College, exposes in his special article appearing on page 40 of this issue of American Druggist.

Mississippi State College students of marketing conducting an impartial survey among retail drug sales clerks in eight Southern States, have brought to light the appalling fact that two-thirds of these sales people—those individuals who come in direct contact with the ultimate consumer—are belittling nationally advertised products by word of mouth "over the counter."

Whether in individual cases this destructive propaganda has been deliberate or whether it has been the result of indifference or plain ignorance on the part of clerks, the significant point is that a majority of retail drug sales people in the area covered by the survey have been telling customers that costs of promotion, exploitation, containers, and other extraneous factors boost the prices of nationally advertised brands which intrinsically are of no better quality than less well-known private, regional, or nonadvertised products.

Under any circumstances, such statements on the part of a large number of retail sales clerks over so wide a region would constitute an alarming threat to the drug industry as a whole, particularly to manufacturers and distributors of nationally known brands. Right now, with fair trade in a precarious position, they constitute a menace to the retail pharmacist himself, as well.

Fair trade is the independent retail pharmacist's own baby. It was the retail pharmacist, through his own State and national organizations, who fought tooth and nail for a law that would enable him to compete on an equal footing with his cut-rate and other competitors. Today manufacturers and wholesalers are allied with the retailer in battling for the preservation of fair trade where it has been enacted and for its extension into States where it has been so far denied.

* * * * *

Here is a real—and perhaps the most vital—danger to what pharmacy has accomplished with such an heroic effort and is defending so doggedly at this moment. The drug clerk and his influence on public and consequently on legislative opinion has been overlooked. Do you know what your clerks are telling your own customers about fair-trade prices these days?

It is up to the owners of pharmacies to see that their clerks are instructed in the beneficial facts of fair trade so that they may build goodwill among your voter-customers instead of destroying it. It is up to State and national pharmaceutical organizations and associations to impress upon their members the necessity of getting their own employees into line behind fair trade.

That is—unless pharmacy has made up its mind to let the fair-trade ship sink and to wallow again in the murky turmoil of unregulated, cut-throat competition which formerly engulfed the independent retailer. American Druggist does not believe pharmacy is willing to give up the ship so readily.

But a ship cannot sail without the loyalty of the crew—and clerks who sell your goods over the counter are the crew of the ship of fair trade.

Is it good business to tolerate mutiny on the "Bounty"—whether deliberate or unintentional? ⁸

PRICE LINES

Retail prices charged for drugs, toiletries, and sundries are to some extent affected by the institution of price lines which was described in detail in part I of this volume.⁹ Price lines for this group of products are much less uniformly observed than in the case of such articles as women's apparel; nevertheless they do have a certain broad effect upon the market.

As mentioned earlier, the retail list prices of these products are usually in even figures. For items selling for \$1 or less, list prices are usually in multiples of 25 cents, i. e., \$1, 75 cents, 50 cents, or 25 cents. In addition, 35 cents is an important intermediate line.

In contrast, contractual minimum prices, except when these are set at the full list, are almost invariably at odd figures. The character of the relation between full list and minimum prices is illustrated in table 32 below. This table is based upon the published list and minimum prices of a leading drug manufacturer. For example, 7 of the items in this manufacturer's line have full list prices of \$1 and contractual minima of 89 cents; four have list prices of \$1 with minima of 79 cents; 18 have list prices of 25 cents and minima of 23 cents, etc. For 82 of the 121 items, list prices are at the five lines which have been described as most common—\$1, 75 cents, 50 cents, 35 cents, and 25 cents. For no single item selling above 10 cents, on the other hand, has the minimum price been established at an even multiple of 5 cents.

⁸ Ibid., p. 25.

⁹ See supra, pp. 242-251.

TABLE 32.—Comparison of full list prices with contractual minimum prices

[Full list prices, in dollars]

Contractual minimum (in dollars)	1.00	0.90	0.85	0.75	0.70	0.65	0.60	0.50	0.45	0.40	0.35	0.30	0.25	0.20	0.15	0.12	0.10	Total
0.89	7																	7
0.79	4	1																5
0.74			1															1
0.69				8														8
0.59				4														5
0.57					1		3											4
0.53						3												3
0.49					1		3	1										5
0.47								6										6
0.43								7										7
0.41								1	1									2
0.39						1		2										3
0.37										2								2
0.33											4							4
0.31										3								7
0.29											7	1						8
0.27											1	1						2
0.23													18					18
0.22													2					2
0.21													3					3
0.19													3					3
0.17														5				5
0.16														2				2
0.13														1				1
0.10															4			4
Total	11	1	1	12	1	6	6	17	1	5	16	2	26	8	4	1	3	121

Source: Published price list of a well-known drug manufacturer.

The difference between the list prices and minimum prices of individual items varies considerably, depending, at least in part, upon the character of the item and the extent to which it is used as a price leader. The maximum differential is usually 20 percent plus 1 cent. This is the exact relation existing between the following combinations of list and minimum prices:

Number of items	List price	Minimum price	Number of items	List price	Minimum price
4	\$1.00	\$0.79	3	\$.40	\$0.31
4	.75	.59	1	.35	.27
2	.50	.39	3	.25	.19

In only two cases, a 70-cent item with a minimum of 49 cents and a 65-cent item with a minimum of 39 cents, was the difference between the full list and the minimum price wider than 21 percent. Both of these items are toiletries of a kind which are particularly subject to severe price cutting.

For the bulk of the items sold by this manufacturer, however, the differential between the full list price and the minimum price was much narrower, in many cases ranging from 1 to 3 cents. The most frequent single situation was in the case of 18 items whose full list price was 25 cents and for which the minimum price was 23 cents.

In the case of expensive cosmetics—those selling for \$1 and more—minimum prices are usually fixed at the full list. For these items,

therefore, price lines are usually at even figures: e. g., \$1, \$1.50, \$3.75, \$5, etc. In the range below \$1, minimum prices for cosmetics are also often at the full list, or else 1 to 3 cents below it.

With regard to the prices actually charged by retailers, as distinct from the list prices or minimum prices established by manufacturers, there is no very consistent tendency toward the observance of any definite price lines. Table 33 indicates the frequency with which particular prices were reported to the Bureau of Labor Statistics for 14 different drug store items during June 1939. The frequency distribution is shown separately for chain stores and independents and for nationally advertised and substitute brands. The table is limited to items selling between 10 cents and 50 cents because there are not enough quotations above or below these levels to provide any satisfactory indication of the practices observed. However, it may be mentioned that a great majority of the quotations between 50 cents and \$1 were at three prices, which were, in order of frequency, 59 cents, 55 cents, and 79 cents.

The distribution of price quotations in the table is, of course, influenced by the particular items for which these prices were reported and does not necessarily represent actual pricing practices for all articles sold by drug stores within this price range. Nevertheless, certain inferences seem warranted.

For all items and outlets combined, there are only two prices—25 cents and 39 cents—which accounted for more than 10 percent of the total number of quotations. Six other lines—10 cents, 20 cents, 23 cents, 29 cents, 49 cents, and 50 cents—each represented more than 5 percent of the total number of quotations. These eight price lines, together, accounted for 69 percent of the total number of prices quoted in the 10-cent to 50-cent range. Chain stores appear to quote prices in odd figures somewhat more frequently than do independents, both for nationally advertised and for substitute products. For example, chain stores report more quotations at 49 cents than at 50 cents, while for independents the relation is reversed. The 25-cent price line is also more commonly observed by independents than by chain stores, whereas the former reported more quotations at 23 cents.

In summary, price lines evidently play some part in the retail pricing practices of drug stores. Price lines at odd figures seem to be somewhat more characteristic of chain stores and of nationally advertised brands, while even figures are more commonly quoted by independent stores and for substitute or unadvertised brands. (Prescriptions are almost invariably priced at even figures.) However, these tendencies are by no means consistent and undoubtedly reflect the choice of items included in the tabulations, so that no clear generalization seems warranted.

TABLE 33.—*Distribution of retail prices quoted by drug stores for 13 items selling between 10 and 50 cents*

Price (in cents)	Total		Nationally advertised brands				Substitute brands			
			Chain stores		Independent stores		Chain stores		Independent stores	
	Number of quotations	Per cent	Number of quotations	Per cent	Number of quotations	Per cent	Number of quotations	Per cent	Number of quotations	Per cent
10.....	167	6	2	(¹)	27	4	72	9	66	12
11.....	4	(¹)					4	(¹)		
12.....	107	4	62	9	33	4	10	1	2	(¹)
2/25.....	6	(¹)					4	(¹)	2	(¹)
13.....	14	(¹)	1	(¹)	6	(¹)	6	(¹)	1	(¹)
2/27.....	2	(¹)					2	(¹)		
14.....	6	(¹)	2	(¹)	1	(¹)	3	(¹)		
15.....	72	3	5	(¹)	30	4	20	3	17	3
16.....	6	(¹)					4	(¹)	2	(¹)
2/33.....	3	(¹)	1	(¹)	1	(¹)			1	(¹)
3/50.....	2	(¹)							2	(¹)
17.....	41	1	2	(¹)	1	(¹)	30	4	8	
18.....	23	(¹)	9	1	6	(¹)	5	(¹)	3	(¹)
19.....	121	4	9	1	22	3	64	8	26	5
2/39.....	10	(¹)	8	1	1	(¹)	1	(¹)		
20.....	157	6	63	9	74	10	9	1	11	2
21.....	39	1	6	(¹)	2	(¹)	8	1	23	4
22.....	3	(¹)	1	(¹)			2	(¹)		
23.....	172	6	55	8	48	6	53	7	16	3
24.....	16	(¹)	8	1	3	(¹)	5	(¹)		
25.....	497	18	101	15	147	20	137	17	112	20
26.....	1	(¹)	1	(¹)						
27.....	110	4	60	9	43	6	6	(¹)	1	(¹)
28.....	5	(¹)	3	(¹)	2	(¹)				
29.....	210	8	42	6	35	5	88	11	45	8
30.....	9	(¹)	2	(¹)	5	(¹)			2	(¹)
31.....	15	(¹)	6	(¹)	6	(¹)	2	(¹)	1	(¹)
32.....	8	(¹)	1	(¹)	4	(¹)	3	(¹)		
33.....	64	2	19	3	18	2	21	3	6	1
34.....	41	1	26	4	9	1	3	(¹)	3	(¹)
35.....	34	1	2	(¹)	10	1	8	1	14	3
36.....	4	(¹)	2	(¹)	1	(¹)			1	(¹)
37.....	23	(¹)	7	1	11	1	3	(¹)	2	(¹)
38.....										
39.....	348	13	120	18	116	16	47	6	65	12
40.....	6	(¹)	1	(¹)			1	(¹)	4	(¹)
41.....	7	(¹)	5	(¹)	2	(¹)				
42.....	4	(¹)	2	(¹)			2	(¹)		
43.....	9	(¹)	1	(¹)	4	(¹)	3	(¹)	1	(¹)
44.....	6	(¹)	1	(¹)	1	(¹)	3	(¹)	1	(¹)
45.....	19	(¹)	3	(¹)	7	(¹)	1	(¹)	8	1
46.....										
47.....	7	(¹)	1	(¹)	4	(¹)	1	(¹)	1	(¹)
48.....	3	(¹)			1	(¹)	2	(¹)		
49.....	172	6	20	3	26	3	90	11	36	7
50.....	178	6	5	(¹)	41	5	64	8	68	12
Total.....	2,751		665		748		787		551	

¹ Less than 1 percent.

Source: Bureau of Labor Statistics.

CHAPTER III

DISTRIBUTIVE MARGINS

METHODS OF DISTRIBUTION

Methods of distribution in the drug trade are fairly well defined. The independent retailer buys typically from a full service wholesaler who extends credit and delivery service and maintains a complete stock. The wholesaler, in turn, buys directly from the manufacturer without the intervention of other middlemen, such as brokers or commission merchants. Large retailers such as chain stores, mail-order houses, and department stores buy most of their products directly from the manufacturers but in some cases they, too, must purchase through wholesalers.

The precise function of the wholesale merchant varies somewhat for different products. A number of manufacturers of widely advertised merchandise employ their own salesmen to obtain orders from retailers but such orders are almost always filled by the local wholesaler. Some manufacturers do not sell their merchandise outright to the wholesaler but employ him in the capacity of a *del credere* factor, that is, as an agent who is empowered to sell only under terms specified by the manufacturer but who also assumes any credit risks on the transaction.

Many drug manufacturers seek to exercise control over resale prices at the wholesale as well as at the retail level. Some accomplish this through the machinery provided under the price-maintenance laws; they issue contracts specifying the exact terms and conditions under which the wholesaler may sell to retailers. Other manufacturers utilize the factorship arrangement which has just been described, which relegates the wholesaler to the role of an agent. Still other manufacturers adopt a somewhat more flexible policy; they suggest resale terms and may refuse to deal with wholesalers who do not conform to these suggestions. In addition, of course, many manufacturers make no effort at all to control the prices charged by wholesalers.

One of the major problems confronting the drug wholesaler has already been suggested in the preceding discussion of retailing practices. The variety of items handled by the retailer is so great that the druggist of limited capital must often purchase in very small quantities. Thus the Department of Commerce conducted a careful survey of the operations of one full service wholesale merchant during 1931. This survey showed that purchases of individual commodities by retailers averaged about \$2 per line. The actual figures were:¹

Prescription department.....	\$1. 91
Proprietary remedies.....	1. 73
Sundries.....	2. 12
Surgical and sickroom supplies.....	1. 62
Toilet preparations.....	1. 46

¹ U. S. Department of Commerce, Domestic Commerce Series No. 86, Wholesale Druggists Operations, p. 28.

A survey conducted by the National Wholesale Druggists Association, reflecting the operations of two wholesale drug houses, showed that about 45 percent of all transactions involved sales of less than \$1 per line and that 70 percent involved line extensions of less than \$2.²

This situation obviously entails high-cost operation. According to the Census of Wholesale Distribution, operating expenses for full-line drug wholesalers in 1935 averaged 13 percent of sales; for drug retailers operating expenses were about 24 percent of sales.³

The gross margin or mark-up actually obtained by the distributor on the sale of any product will, of course, depend upon the terms at which he purchases and the price at which he resells. In the case of some products handled by the drug trade, a one-price system is observed at each stage of distribution. The wholesaler pays the same price, regardless of the quantities he purchases, and is bound by contract or perhaps by a factorship arrangement to resell to all retailers at a single specified price. The price to consumers is also fixed by contract, with the minimum established at the full list price, so that again there is no room for variation. In most cases this policy will be modified somewhat, insofar as wholesalers and retailers are concerned, by the availability of optional cash discounts, but these are usually limited to 1 or 2 percent.

In the case of most items handled by the drug trade, however, the situation is far less simple. Discounts on quantity purchases are available both to wholesalers and retailers. Minimum resale prices are established at levels below the full list price of the article, so that the prices charged by different retail stores will vary substantially. Moreover, the determination of the gross margins received by distributors in the drug trade is complicated by the many special forms of allowances which are granted to stimulate quantity buying. In addition to the regular quantity discount, so-called "deals" are available continuously or at intervals for a wide range of products. These deals involve delivering varying amounts of free goods for purchases of a specified amount. These free goods may or may not be of the same kind as those involved in the purchase; often they are supplementary articles. For example, it is common to use toothpaste as a free deal in connection with the sales of toothbrushes, razor blades with razors, etc.

In general, free goods are made available to the retailer directly by the manufacturer, so that while they mean a saving to the retailer, they do not imply any reduction in the margin of the wholesaler.

Price reductions may also take the form of advertising allowances in which the manufacturer recompenses the dealer who advertises his product either by allotting display space, by advertising in local newspapers, or through other means. Prior to the Robinson-Patman Act these advertising allowances were often merely disguised means of granting special price concessions to large buyers. At present the law prohibits this practice; the allowance must represent a recompense for services actually rendered and must also be available on proportionately equal terms to all buyers. As a result, while allowances for store display are still essentially equivalent to price reductions, this is not generally true of allowances to compensate the retailer for advertising placed in local newspapers.

² National Druggists Association, Statistical Division, Bulletin No. 12, June 1930.

³ U. S. Department of Commerce, Census of Business: 1935, "Wholesale Distribution," vol. I, p. 57.

WHOLESALE AND RETAIL MARGINS

The range of margins.—In calculating distributive margins for particular products it is necessary to take all these terms into account. It is evident that there will be no single wholesale or retail margin for most products, but a range of margins. Since most wholesalers buy in large enough quantities to take advantage of all regular quantity and cash discounts the prices they pay for any article will be fairly uniform. However, the mark-ups which they realize may vary materially on different sales, since some of their customers will be in a position to buy in substantial quantities and for cash and thus to take advantage of all available discounts, while others—often the majority—can buy only from hand to mouth and must pay substantially more. The wholesaler's mark-up will obviously be wider on the latter than on the former transaction. It should not be inferred, of course, that his net profit will vary correspondingly, since the higher price paid by the small retailer may less than cover the added cost of serving him.

As between retailers, the situation is even more complex. It was shown in the preceding chapter that the independent retailer, especially the small independent, is likely to charge the consumer somewhat more than the chain store, particularly for popular, nationally advertised merchandise. At the same time he will usually also pay more because of his inability to take full advantage of quantity and cash discounts, deals, and allowances. The large retailer, including the chain store, will generally both pay less and charge less; where price-maintenance contracts have been issued his selling price is usually the minimum allowed. Retailers who can buy directly from the manufacturer can purchase many products even more cheaply than those who buy in similar quantities through wholesalers. The policy of the manufacturer is important in this regard, some seek to encourage direct buying, others discourage it, a few will sell only to wholesalers and refuse any form of direct dealing. Differences in the prices paid by retailers for merchandise are probably narrower today than they were a few years ago, partly because of the Robinson-Patman Act which limits the extent to which manufacturers and wholesalers may discriminate in price among their customers, and partly because of the advent of resale-price maintenance.

In order to obtain information regarding the margins actually prevailing, a field survey of a number of representative manufacturers and wholesalers was conducted during November 1939. The results of this survey, which are summarized below, illustrate the variety of practices encountered. Except as otherwise stipulated, the data in each case relate to conditions as of November 1939.

Pharmaceutical "A".—The dealer's list price (distinct from the consumer's list) for a nationally advertised pharmaceutical is \$14.40 per gross, or 10 cents per unit. The wholesaler receives a 15 percent trade and 1 percent cash discount which brings his price down to 8.4 cents. Price maintenance contracts stipulate the wholesaler's maximum discounts to retailers on the following basis:

Purchase of—	Percent discount
Under \$2.....	2
\$2 to \$5.99.....	5
\$6 to \$15.99.....	7½
\$16 to \$43.19.....	10
\$43.20 and over.....	no stipulation

On this basis the retailer's purchase price and the wholesaler's gross margin ⁴ will be:

Retailer's order	Retailer's purchase price (per gross)	Wholesaler's gross margin
		<i>Percent</i>
Under \$2.00.....	\$14. 11	14. 1
\$2.00 to \$5.99.....	13. 68	11. 4
\$6.00 to \$15.99.....	13. 32	9. 0
\$16.00 to \$43.19.....	12. 96	6. 5

This means that the wholesaler's gross margin on sales of this product will vary from 14.1 percent to 6.5 percent, depending upon the quantity sold; on large orders it may even be considerably less than 6 percent.

In the first place, large retailers may purchase direct from the manufacturer if they buy in quantities exceeding \$43.19 and can show a satisfactory credit standing. The direct retail account receives the same discounts as the wholesaler; that is, 15 percent off list and 1 percent off net for cash.

In addition, there are various free deals and display allowances available to retailers purchasing through wholesalers which are equivalent to a substantial reduction in price. These deals are made available by the manufacturer and do not affect the wholesaler's margin. The deals are granted at the rate of 6 percent of the retailer's total purchase from the manufacturer's representative, payable in free goods. Advertising allowances to wholesaler's customers are based on 5 percent of the retailer's total purchase, also in free goods, and are granted on orders of \$6 and over. Direct buyers can obtain a discount of 5 percent of their annual net purchases if they display the product on a basis stipulated by contract.

By taking advantage of all these allowances, the purchaser of a \$10 order through a wholesaler can obtain 111 units for a net cost of \$9.25, equivalent to a cost per unit of 8.33 cents. On a \$16 order the cost per unit will be reduced to 8.11 cents. The direct buyer taking advantage of the display allowances will pay only 7.99 cents.

This product sells at retail between 12 cents and 15 cents, the former being the fair-trade minimum and the latter the full retail list price. The gross margin to the retailer will vary, depending both upon the price charged and upon his methods and quantities of purchase. To the very small buyer who pays 9.8 cents for each unit, the minimum resale price of 12 cents will allow only an 18.3 percent margin, while the full retail price of 15 cents means a 34.7 percent margin. To the retailer who buys in \$16 quantities, on the other hand, even the minimum price will allow a 32.4 percent gross margin, while the full retail price is equivalent to a 45.9 percent margin. For the direct buyer who takes advantage of the display allowance even the minimum consumer's price affords a 33.4 percent gross margin, while the full retail price means a 46.7 percent margin.

It is obvious that no generalization with regard to distributive margins for this product is possible or significant. The very small retailer, who usually sells at the full list price, will in fact obtain a

⁴ Margins are computed as percentages of the selling price in each case. This is the customary practice.

gross margin slightly larger than the chain store which buys directly and sells at the fair-trade minimum.

Table 34 summarizes wholesale and retail margins under various conditions of purchase and sale.

TABLE 34.—*Wholesale and retail margins for nationally advertised pharmaceutical "A,"*

Manufacturer's price to wholesalers.....	per gross..	\$14. 40
Manufacturer's price to wholesalers, less discounts (including cash).....	per gross..	\$12. 12
Net cost to retailers purchasing through wholesalers.....	do.....	\$12. 96-14. 11
Wholesaler's mark-up.....	percent..	6. 5-14. 1
Wholesaler's price to retailers, with minimum discount, and exclusive of free deals and display allowances.....	per gross..	\$14. 11
Full retail list price.....	each..	\$0. 15
Retailer's mark-up on full retail price.....	percent..	34. 7
Minimum retail price.....	each..	\$0. 12
Retailer's mark-up on minimum retail price.....	percent..	18. 3
Wholesaler's price to retailers, with maximum discount, and exclusive of free deals and display allowances.....	per gross..	\$12. 96
Retailer's mark-up on full retail list price.....	percent..	40. 0
Retailer's mark-up on minimum retail price.....	do.....	25. 0
Net cost to retailers buying through wholesalers, with maximum trade discount, with free deals and display allowance (on \$16 order).....	per gross..	\$11. 68
Retailer's mark-up on full retail list price.....	percent..	45. 9
Retailer's mark-up on minimum retail price.....	do.....	32. 4
Manufacturer's list to direct customers.....	per gross..	\$14. 40
Manufacturer's price to direct customers, less trade and cash discounts.....	per gross..	\$12. 12
Retailer's mark-up on full retail list price.....	percent..	43. 9
Retailer's mark-up on minimum retail price.....	do.....	29. 9
Net cost to direct customers, less trade and cash discounts and display allowances.....	per gross..	\$11. 51
Retailer's mark-up on full retail list price.....	percent..	46. 7
Retailer's mark-up on minimum retail price.....	do.....	33. 4

Pharmaceutical "B."—Another nationally advertised pharmaceutical is sold outright to jobbers. The manufacturer's list price is \$4 per dozen or 33.3 cents per unit, and all prices are on a delivered basis. The company has no manufacturer-jobber price maintenance contracts. Jobbers, who must order in quantities of at least \$40, receive a 15 percent trade discount and a 2 percent cash discount, which reduces their cost per dozen to \$3.33, and unit cost to 27.8 cents. The jobber may grant dealers any discount he cares to make. The manufacturer reports that these range ordinarily from 5 to 10 percent, depending upon competition. On this basis, the jobber's gross margin varies from 12.4 percent to 7.5 percent.

To the dealers purchasing through jobbers, free deals and display allowances which result in a substantial decrease in the dealer's costs are available on orders ranging from \$6 to \$21. As free deals, additional quantities of the same product are offered; these are given at the rate of one unit for each \$6 order. Display allowances are granted in the form of free goods of a somewhat different article and the value

of these allowances varies according to the quantity of the order and the duration of the display. By taking advantage of the free deals, the purchaser of a \$6 order can obtain 19 units for a net cost of \$5.40 to \$5.70, depending on the discount granted by the jobber, with a resulting cost per dozen from \$3.41 to \$3.60 and a unit cost from 28.4 cents to 30 cents. Sufficient price data are not available to make an estimate of the value of display allowances to these buyers. If such a purchaser does not take advantage of these free deals, his unit cost varies from 30 cents to 31.7 cents, again depending on the jobber's discount.

Large retailers, whose minimum order must be \$40 list, receive the same discounts as do jobbers; that is, a 15-percent trade discount from list and a 2-percent cash discount from net. These purchasers are granted no free deals, but display allowances up to 5 percent are given provided the retailer displays the merchandise in a manner acceptable to the manufacturer. Taking into consideration the cash and trade discounts, but not the display allowance, cost per dozen is reduced to \$3.33 or 27.8 cents per unit.

The manufacturer has established manufacturer-retailer contracts in only one State; in that State the minimum retail price is set at 39 cents. The full list price is 50 cents. The 51 retail prices on this product reported to the Bureau of Labor Statistics as of March 15, 1939 (including 3 quotations for the State in which minimum prices are in force), ranged from 29 cents to 50 cents. Thirty-one of these quotations were from independent stores and 20 from chain stores. The range of prices reported from chain stores was from 29 cents to 39 cents, with 34 cents the modal price; the range in independent stores was 29 cents to 50 cents, with 39 cents as the modal price. For an independent store which purchases this product through a jobber, and takes advantage of the free deals, the modal price of 39 cents affords a gross margin of 23.1 percent to 27.1 percent, depending upon the discount granted by the jobber. On this same basis the full retail price of 50 cents afford margins ranging from 40 percent to 43.2 percent. For a chain store which buys directly, and takes advantage of the cash discount but not the display allowance, the modal price of 34 cents affords a margin of 18.4 percent and the highest retail price reported by any chain, 39 cents, means a margin of 28.8 percent.

It is obvious that the direct buyer of this product does not receive price concessions from the manufacturer great enough to account fully for the lower price at which he sells the product, and the average small retailer apparently obtains a larger mark-up than does the chain store. The considerably lower modal price charged for this product in chain stores is probably due to the fact that it is very commonly used as a price leader.

Table 35 summarizes retail and wholesale margins for this pharmaceutical. For the reasons mentioned above, no account has been taken of the value of display allowances to retailers purchasing through jobbers. Since these allowances represent an appreciable reduction of the net price to these retailers, the margins shown in the table should be interpreted accordingly.

TABLE 35.—*Wholesale and retail margins for nationally advertised pharmaceutical "B"*

Manufacturer's list price.....	dozen.....	\$4. 00
Net cost to jobbers—list, less 15 percent trade, less 2 percent cash.....	do.....	3. 33
Net cost to retailers purchasing through jobbers (5 percent off list).....	do.....	3. 80
Jobber's gross margin.....	percent.....	12. 4
Net cost to retailers purchasing through jobbers (10 percent off list).....	dozen.....	\$3. 60
Jobber's gross margin.....	percent.....	7. 5
Net cost to retailers purchasing through jobbers, list less 5 percent, exclusive of free deals.....	dozen.....	\$3. 80
Net cost to retailers purchasing through jobbers, list less 5 percent, with free deals.....	dozen.....	3. 60
Full retail list price.....	each.....	. 50
Retailer's mark-up, exclusive of free deals.....	percent.....	36. 7
Retailer's mark-up, with free deals.....	do.....	40. 0
Minimum retail price, where prescribed.....	each.....	\$0. 39
Retailer's mark-up, exclusive of free deals.....	percent.....	18. 8
Retailer's mark-up, with free deals.....	do.....	23. 1
Net cost to retailers purchasing through jobbers, list less 10 percent, exclusive of free deals.....	dozen.....	\$3. 60
Net cost to retailers purchasing through jobbers, list less 10 percent, with free deals.....	dozen.....	3. 41
Full retail list price.....	each.....	. 50
Retailer's mark-up, exclusive of free deals.....	percent.....	40. 0
Retailer's mark-up, with free deals.....	do.....	43. 2
Minimum retail price, where prescribed.....	each.....	\$0. 39
Retailer's mark-up, exclusive of free deals.....	percent.....	23. 1
Retailer's mark-up, with free deals.....	do.....	27. 1
Manufacturer's list to direct customers, less 15 percent trade, less 2 percent cash, exclusive of display allowances.....	dozen.....	\$3. 33
With display allowances.....	do.....	3. 16
Full retail list price.....	each.....	. 50
Retailer's mark-up, exclusive of display allowance.....	percent.....	44. 5
Retailer's mark-up, with display allowance.....	do.....	47. 3
Minimum retail price, where prescribed.....	each.....	\$0. 39
Retailer's mark-up, exclusive of display allowance.....	percent.....	28. 8
Retailer's mark-up, with display allowance.....	do.....	32. 5
Modal price, Bureau of Labor Statistics data for chain stores.....	each.....	\$0. 34
Retailer's mark-up, exclusive of display allowance.....	percent.....	18. 4
Retailer's mark-up, with display allowance.....	do.....	22. 5
Lowest price reported to Bureau of Labor Statistics for chain stores.....	each.....	\$0. 29
Retailer's mark-up, exclusive of display allowance.....	percent.....	4. 3
Retailer's mark-up, with display allowance.....	do.....	9. 2

Drug sundry.—A widely advertised drug sundry affords an illustration of the factorship principle. The wholesaler acts to all intents and purposes as the manufacturer's agent and receives a specified commission on all sales. In addition, a bonus is paid to the wholesaler for handling a designated quota of merchandise. Direct sales to retailers are made only in single shipments amounting to at least 100 pounds of the two major products of this company, and it is also required that the net purchases of such retailers be not less than \$500 each 6 months.

At the present time the factor's commission, including his bonus, ranges from 17 percent for sales in lots of a dozen packages to 15.4 percent for sales in lots of one gross. These commissions have varied only fractionally since 1935. It is evident that the gross margin to the wholesaler on this item is fairly uniform, regardless of the size of the sale. The prices paid by retailers are also little affected by the

quantity of purchase. At the present time, for example, the price on dozen lots on sales through factors is \$2.06 per dozen less 10 percent, while on gross lots the price per dozen is \$2.02 less 10 percent, representing a quantity discount of only about 2 percent. Direct buyers are granted a slight advantage, paying \$2.02 less 14½ percent, less 1 percent off net for cash. In other words, the smaller retailer buying in dozen lots pays 15.4 cents per unit while the large direct buyer pays 14.25 cents, representing a total advantage to the large customer of only about 7.5 percent. At the retail price of 20 cents, which is the price usually charged by both chain and independent outlets, this is equivalent to a gross margin varying from 22.9 to 28.8 percent.

Since 1935 there have been a number of changes in both the wholesale and retail price structure of this product. The price to consumers was advanced twice during this period. The wholesale price to direct buyers was also advanced but not in the same proportion. On the other hand, the price paid by small retailers was actually reduced. As a result, the gross margin received by the small retailer on sales of this product more than doubled, while the margin of direct buyers increased slightly. Changes in factor's commissions and retailer's gross margins for this sundry are summarized in table 36 below. Retail margins are computed on the basis of the minimum fair trade price which is also the price most frequently charged by both chain and independent drug stores.

TABLE 36.—*Wholesale and retail margins for nationally advertised drug sundry*

	Aug. 15, 1935, through June 28, 1936	June 29, 1936, through Jan. 1, 1937	Jan. 2, 1937, through Apr. 30, 1937	May 1, 1937, through Dec. 31, 1938	Jan. 1, 1939, through Nov. 15, 1939
Manufacturer's commission to factors, percent.....	14.0-17.1	14.1-17.1	15.4-17.0	15.4-17.1	15.4-17.0
Manufacturer's list to factor's customers, per dozen.....	\$1.87-\$1.94	\$1.87-\$1.94	\$1.90-\$1.94	\$2.02-\$2.06	\$2.02-\$2.06
Manufacturer's list to factor's customers, less trade discount, per dozen.....		\$1.78-\$1.88	\$1.81-\$1.88	\$1.82-\$1.85	\$1.82-\$1.85
Usual retail price, each.....	\$0.18	\$0.19	\$0.19	\$0.20	\$0.20
Gross mark-up to factor's customers, percent.....	10.2-13.4	17.5-21.9	17.5-20.6	22.9-24.2	22.9-24.2
Manufacturer's list to direct buyers, per dozen.....	\$1.84-\$1.92	\$1.87-\$1.92	\$1.92-\$2.02	\$2.02-\$2.04	\$2.02
Less trade discount, less cash discount, per dozen.....	\$1.64-\$1.71	\$1.67-\$1.71	\$1.70-\$1.72	\$1.71-\$1.73	\$1.71
Usual retail price, each.....	\$0.18	\$0.19	\$0.19	\$0.20	\$0.20
Gross mark-up to direct buyers, percent.....	20.8-24.1	25.0-26.8	24.6-25.4	27.9-28.8	28.8
Less trade discount, cash discount and carload quantity discount, per dozen.....	\$1.59	\$1.62	\$1.63	-----	-----
Gross mark-up to direct buyers, percent.....	26.4	28.9	28.5	-----	-----

Toiletry "A".—A nationally advertised toiletry is also sold on the factorship basis. The wholesaler's list price is \$3.20 per dozen, or 26.7 cents per unit. The factor receives a 15 percent commission from this list, less 2 percent of net for cash received within 10 days of invoice. In addition, a bonus of 5 percent from net (before the 2 percent is deducted) is given for satisfactory performance in accordance with the factorship agreement. If all these discounts are received, they bring the factor's price down to 21.1 cents per unit.

Retailers purchasing through factors are granted the following discounts:

Quantity purchased:	Percent discount
Less than 6 units.....	3
6 units.....	8
\$24.00 order or more of any of manufacturer's products.....	10

On this basis the retailer's purchase price may vary from 25.8 cents per unit to 24 cents. The factor's gross margin, including his bonus, can vary from 18.4 percent to 12.2 percent, depending upon the quantity purchased by the retailer.

Retailers purchasing a minimum of \$100 of any of this manufacturer's products in a single shipment may purchase direct from the manufacturer. On such purchases, the retailer is allowed a deduction of 15 percent from list, less 2 percent from net for cash received within 10 days of invoice.

The dealer purchasing through a wholesale factor has a unit cost of 24 cents to 25.8 cents, depending on whether he purchases less than one-half dozen units, or as much as \$24. Direct purchasers obtain their goods at a cost of \$2.67 per dozen and a unit cost of 22.3 cents.

Advertising allowances amounting to 5 percent of net purchases for the previous 6-month period are available to all retailers on a contractual basis to compensate for the actual cost of the advertisements inserted. The advertisements must appear in established daily newspapers and tear sheets must be submitted as evidence. No deals were offered during 1939.

This product sells at retail between 33 cents and 40 cents, the former being the fair-trade minimum and the latter the full list price. Of the 20 quotations reported to the Bureau of Labor Statistics on this product as of June 1939, 18 were at 33 cents, 1 at 36 cents, and 1 at 39 cents. However, data supplied by the manufacturers indicate that the average retail price during the period 1937-40 has been about 36 cents. The retailer's gross margin depends, therefore, upon the retail price he charges and the quantity he purchases at a given time. To the retailer whose unit cost is 25.8 cents, the minimum resale price of 33 cents allows a 21.7 percent margin, while the full list price of 40 cents allows a 35.4 percent margin. To the retailer who buys the manufacturers' products through a factor in \$24 lots, the minimum retail price affords a margin of 27.3 percent, and the full list a margin of 40 percent. The minimum price allows the direct buyer a gross margin of 32.6 percent and the full list, 44.4 percent.

The retailer receiving the minimum discounts and selling at full list obtains a slightly higher gross margin than does the large purchaser who receives the maximum allowances and resells at the minimum.

These data are summarized in table 37.

TABLE 37.—*Wholesale and retail margins for nationally advertised toiletry "A"*

Manufacturer's list price.....	dozen..	\$3. 20
To wholesale-factors, list, less 15 percent trade, less 2 percent cash, less 5 percent bonus.....	dozen..	\$2. 53
To retailers purchasing less than ½ dozen—list, less 3 percent.....	do..	\$3. 10
Wholesaler's mark-up.....	percent..	18. 4
To retailers purchasing ½ dozen to \$24 assorted order—list, less 8 percent.....	dozen..	\$2. 94
Wholesaler's mark-up.....	percent..	13. 9
To retailers purchasing \$24 order of manufacturer's products—list, 10 percent.....	dozen..	\$2. 88
Wholesaler's mark-up.....	percent..	12. 2
To retailers purchasing through wholesale-factor—list, less 3 percent.....	dozen..	\$3. 10
Full retail list price.....	each..	\$0. 40
Retailer's mark-up on full retail list price.....	percent..	35. 4
Minimum retail price.....	each..	\$0. 33
Retailer's mark-up on minimum retail price.....	percent..	21. 7
To retailers purchasing through wholesale-factor—list, less 8 percent.....	dozen..	\$2. 94
Retailer's mark-up on full retail list price.....	percent..	38. 8
Retailer's mark-up on minimum retail price.....	do..	25. 8
To retailers purchasing through wholesale-factor—list, less 10 percent.....	dozen..	\$2. 88
Retailer's mark-up on full list retail price.....	percent..	40. 0
Retailer's mark-up on minimum retail price.....	do..	27. 3
To retailers purchasing from manufacturer—list, less 15 percent, less 2 percent.....	dozen..	\$2. 67
Retailer's mark-up on full retail list price.....	percent..	44. 4
Retailer's mark-up on minimum retail price.....	do..	32. 6

Toiletry "B".—The manufacturer of another nationally advertised toiletry maintains his own sales organization for supplying retailers, and by far the larger volume of sales is made direct. This product is offered in three package sizes; small, intermediate, and large. Of these, the small accounts for the largest number of unit sales. The list price to jobbers for the small size is 75 cents per dozen, or 6.25 cents per unit. No trade discount is given, but a 2 percent cash discount is available which reduces the retailer's cost to 73.5 cents per dozen. The manufacturer has no contracts with jobbers stipulating the price they must charge the retailer, but the manufacturer "suggests" a price of 85 cents per dozen which affords a 13.5 percent gross margin to the jobber.

Several possibilities as to methods of purchase are available to the retailer. Retailers buying direct pay 75 cents per dozen, and are allowed a 2-percent discount for cash received within 10 days of delivery.

The suggested price to retailers buying from jobbers or wholesalers is 85 cents per dozen, or 7.1 cents per unit. No free deals are offered on this product. The minimum retail price is 10 cents, which is also the full retail price. Assuming a retailer buys through a jobber and thus pays 85 cents per dozen, this price affords him a margin of 29.2 percent; for a retailer purchasing direct and taking advantage of the cash discount affords a margin of 38.8 percent.

On the two larger sizes the jobber's margin is 15.1 percent and 14.4 percent respectively as compared with his 13.5 percent margin on the small size. In contrast, retailers obtain a much smaller margin on the larger sizes which they sell at the minimum retail price, although

the large size affords a greater margin than does the intermediate size. Direct buyers obtain a margin of 27.3 percent and 30.8 percent on the larger sizes as compared with 38.8 percent on the small size; indirect buyers receive a margin of 14.4 percent and 19.2 percent on the larger sizes, 29.2 percent on the small size. If the full list price is charged for the two larger sizes, the direct buyer obtains a margin of 31.1 percent and 34.8 percent, as contrasted with the 18.9 percent and 23.8 percent obtained by the indirect buyer.

No advertising allowances are available on the small size, but they are granted on the two larger sizes as reimbursement for actual expenditures made for advertising. The amount of these allowances is varied from time to time, but they are usually 5 percent of net sales for a 3 months period.

These data are summarized in table 38.

TABLE 38.—*Wholesale and retail margins for nationally advertised toiletry "B"*

	Small size	Intermediate size	Large size
Manufacturer's list to jobbers.....dozen.....	\$0. 75	\$1. 60	\$2. 80
Manufacturer's list to jobbers, less cash discount.....do.....	. 735	1. 57	2. 74
"Suggested" price to jobbers' customers.....do.....	. 85	1. 85	3. 20
Jobber's mark-up.....percent.....	13. 5	15. 1	14. 4
"Suggested" price to retailers.....dozen.....	\$.85	\$1.85	\$3. 20
Retailer's mark-up on full retail list price.....percent.....	29. 2	22. 9	23. 8
Retailer's mark-up on minimum price.....do.....	29. 2	14. 4	19. 2
Manufacturer's list to direct buyer.....dozen.....	\$.75	\$1.60	\$2. 80
Less cash discount.....do.....	. 735	1. 57	2. 74
Full retail list price.....each.....	. 10	. 20	. 35
Retailer's mark-up on full retail list price.....percent.....	38. 8	34. 6	34. 8
Minimum retail sale price.....each.....	\$.10	\$.18	\$.33
Retailer's mark-up on minimum price.....percent.....	38. 8	27. 3	30. 8

Toiletry "C."—This product is sold either through wholesalers or directly to retailers. Orders from wholesalers, as well as direct sales must be in minimum quantities of \$48, but may include any combination of the manufacturer's products. Minimum resale prices for both wholesalers and retailers are set by contract.

The list price to wholesalers or jobbers is \$2 per dozen. They receive a trade discount of 15 percent and a cash discount of 2 percent, which reduces the price per dozen to \$1.67, and per unit to 13.9 cents. The manufacturer-wholesaler price maintenance contracts stipulate a 1 percent cash discount to indirect buyers on orders of less than \$2, and a 5 percent discount inclusive of cash for orders of \$2 or more. On this basis the indirect buyer's cost varies from \$1.90 to \$1.98 per dozen, and the wholesaler's gross margin varies from 12.1 percent to 15.7 percent, depending upon the size of the order.

Direct customers receive the same discounts as wholesalers and jobbers; that is, 15 percent off list, less 2 percent for cash. This reduces the cost to \$1.67 per dozen and 13.9 cents per unit.

As previously shown, retailers purchasing through wholesalers pay \$1.90 to \$1.98 per dozen, depending upon the quantity purchased at any one time. During 1939, two units of this toiletry were offered with each \$6 order (list prices). This offer was available only to retailers purchasing through wholesalers or jobbers. Considering the value of this deal, the unit cost is reduced to 15 cents. Deals involving other of the company's products were also offered during 1939.

Some advertising allowances are made from time to time, available to all retailers, but no detailed data regarding these have been compiled.

This product retails between 19 cents and 25 cents. The former is the minimum allowed under resale price maintenance contracts, the latter is the full list price. The gross margin to the retailer varies with the method of purchasing and the quantity of the order. To the small retailer who buys in quantities under \$2, the minimum retail price allows a margin of 13.2 percent, and the full list price a mark-up of 34 percent. If his order is from \$2 to \$6, the minimum retail price affords a margin of 16.7 percent, the full list a margin of 36.7 percent. In 1939 if his order was \$6 or more, he could take advantage of the "free deal" and receive 38 rather than the customary 36 units. In this case the minimum retail price yielded a margin of 21.1 percent, and the full list a margin of 40 percent.

To the large retailer who purchased directly from the manufacturer and took advantage of the cash discount, the minimum retail price afforded a 26.7 percent margin, and the full list price 44.3 percent.

In other words, the large retailer normally obtains a 10 percent larger mark-up than the small retailer when the two sell at the same retail price, but this differential was reduced to approximately 5 percent by the "free deal" offer in 1939.

These data are summarized in table 39:

TABLE 39.—*Wholesale and retail margins for Toiletry "C"*

Manufacturer's list price.....	dozen.....	\$2. 00=
To wholesalers and jobbers—list, less 15 percent, less 2 percent cash discount.....	dozen.....	\$1. 67
To retailers buying through wholesalers and jobbers, less 1 percent for orders less than \$2.....	dozen.....	\$1. 98
Less 5 percent for orders of \$2 or more.....	do.....	\$1. 90
Wholesalers' mark-up on orders of less than \$2.....	percent.....	15. 7
Wholesalers' mark-up on orders of \$2 and over.....	do.....	12. 1
Net cost to retailers purchasing through wholesalers, exclusive of free deals, on orders less than \$2.....	dozen.....	\$1. 98
Minimum retail price.....	each.....	\$. 19
Retailer's mark-up on minimum retail price.....	percent.....	13. 2
Full retail list price.....	each.....	\$. 25
Retailer's mark-up on full retail list price.....	percent.....	34. 0
Net cost to retailers purchasing through wholesalers, exclusive of free deals, on orders of \$2 to \$6.....	dozen.....	\$1. 90
Retailer's mark-up on minimum retail price.....	percent.....	16. 7
Retailer's mark-up on full retail list price.....	do.....	36. 7
Net cost to retailers purchasing through wholesalers, on orders of \$6 or more, with free deals.....	dozen.....	\$1. 80
Retailer's mark-up on minimum retail price.....	percent.....	21. 1
Retailer's mark-up on full retail list price.....	do.....	40. 0
Net cost to retailers purchasing directly from manufacturer—list, less 15 percent, less 2 percent.....	dozen.....	\$1. 67
Retailer's mark-up on minimum retail price.....	percent.....	26. 7
Retailer's mark-up on full retail list price.....	do.....	44. 3

Cosmetic "A."—The manufacturer of a nationally advertised cosmetic employs the wholesaler in the capacity of a del credere factor. The wholesale list price is \$8 per dozen, or 66.7 cents per unit. The manufacturers allow the factor a commission of 5 percent, and a cash discount of 1 percent from net, plus an additional 10

percent off net. This brings the unit cost down to 56.3 cents. The price to a retailer purchasing through a wholesaler is 33½ percent from list. The wholesaler is allowed to use his own discretion as to whether or not a cash discount is granted, but, according to the manufacturer, the wholesaler usually grants the retailer a 2 percent discount. This means that the wholesaler's gross margin is 13.8 percent, from which his freight costs must be deducted.

Retailers whose net purchases amount to \$300 per year, and who have a good credit standing, may purchase directly from the manufacturer. The list price to direct buyers is \$12 per dozen, less trade discounts of 33½ percent and 5 percent, and a cash discount of 1 percent from net. The cost per dozen is thus reduced to \$7.52 and the unit cost to 62.7 cents. The retailer purchasing from the wholesaler is granted a trade discount of 33½ percent, and is usually allowed a 2 percent cash discount by the wholesaler. His cost per dozen is then \$7.84, and his unit cost 65.3 cents. No free deals have been granted on this cosmetic.

The manufacturer's resale price contracts fix the minimum retail price at the full list of \$1, which is therefore the price charged universally, at least in fair-trade States. This affords the retailer buying through a wholesaler a mark-up of 34.7 percent allowing for a 2 percent cash discount. The direct buyer obtains a gross margin of 37.3 percent.

Advertising allowances are on a cooperative basis, with manufacturer and retailer sharing equally the costs of advertising a combination of manufacturer's products.

These data are summarized in table 40:

TABLE 40.—*Wholesale and retail margins for nationally advertised Cosmetic "A"*

Manufacturer's list to wholesalers, per dozen.....	\$8. 00
Less trade discount of 5 percent, less 10 percent, less 1 percent cash, per dozen.....	\$6. 76
List to retailer, less 33½ percent trade discount, per dozen.....	\$8. 00
Wholesaler's margin, percent.....	15. 5
List to retailer, less 33½ percent trade discount, less 2 percent cash, per dozen.....	\$7. 84
Wholesaler's mark-up, percent.....	13. 8
Manufacturer's list to retailer purchasing through wholesaler, per dozen.....	\$12. 00
Less trade discount of 33½ percent, less 2 percent for cash, per dozen.....	\$7. 84
"Minimum" retail price, each.....	\$1. 00
Retailer's mark-up on minimum retail price, percent.....	34. 7
Manufacturer's list to retailers buying direct, per dozen.....	\$12. 00
Less trade discounts of 33½ percent, less 5 percent, less 1 percent cash, per dozen.....	\$7. 52
"Minimum" retail price, each.....	\$1. 00
Retailer's mark-up on minimum retail price, percent.....	37. 3

Cosmetic "B".—The manufacturer of another brand of cosmetic sells outright to jobbers and wholesalers, and also to direct customers. Both manufacturer-wholesaler and manufacturer-retailer contracts are in effect.

The retail list price is 55 cents per unit or \$6.60 per dozen. The wholesaler receives trade discounts of 33½ percent off list, making the wholesale list price \$4.40 per dozen. The wholesaler also receives 10 percent off this wholesale list, 5 percent off net (provided he purchases

in lots of \$50 or more) and 1 percent off net for cash. This reduces his cost per dozen to \$3.72 and the unit cost to 31 cents. Price maintenance contracts stipulate the wholesaler's price to retailers as retail list, less 33½ percent, regardless of quantity. The wholesaler may, at his discretion, allow an added 1 percent off net for cash. On this basis the retailer's cash purchase price will be \$4.36, or 36.3 cents per unit, and the wholesaler's gross margin 14.7 percent. (If the retailer does not receive the cash discount, the wholesaler's margin will be 15.5 percent.)

Direct retail purchasers receive 33½ percent discount off retail list, less 5 percent off net on orders of \$25 or over, less 1 percent cash discount. This reduces the cost per dozen to \$4.14 and unit cost to 34.5 cents.

The manufacturer pays one-half the cost of newspaper advertising, up to 5 percent of the retailer's annual net purchases. No free deals are given.

The minimum retail, as well as the list price on this product, is 55 cents each. To the direct buyer who takes advantage of the cash discount, this price affords a gross margin of 37.3 percent. The retailer who purchases through wholesalers, obtains a margin of 33.3 or 33.9 percent, depending upon whether a cash discount is offered and received.

This manufacturer packages the same powder in a larger container than that described above. The following table shows that the mark-ups stipulated by the manufacturer on these two sizes are identical.

These data are summarized in table 41:

TABLE 41.—*Wholesale and retail margins for nationally advertised Cosmetic "B"*

Manufacturer's retail list price, per dozen.....	\$6. 60
To wholesalers and jobbers—list, less 33½ percent, less 10 percent, less 5 percent, less 1 percent, per dozen.....	\$3. 72
To retailers purchasing through wholesalers—list, less 33½ percent, less 1 percent cash, per dozen.....	\$4. 36
Wholesalers' and jobbers' gross mark-ups, percent.....	14. 7
To retailers purchasing through wholesalers—list, less 33½ percent, less 1 percent cash, per dozen.....	\$4. 36
Minimum retail price, each.....	\$0. 55
Retailer's mark-up on minimum retail price, percent.....	33. 9
To retailers purchasing directly from manufacturer—list, less 33½ percent, less 5 percent, less 1 percent, per dozen.....	\$4. 14
Minimum retail price, each.....	\$0. 55
Retailer's mark-up on "minimum" retail price, percent.....	37. 3

Cosmetic "C".—In the case of some products, deals and terms are so complex that it is difficult to translate them into definite percentage margins. For example, the manufacturer of another nationally advertised cosmetic also produces many other related articles. Display allowances and free deals are generally offered in terms of combinations of several of these products. In addition, price maintenance contracts have been issued in five western States only and terms of sale in these States vary from those in other parts of the country.

The largest volume of sales is through wholesalers, although some sales are made directly to retailers. Only chain stores with three or more units and department stores can qualify for direct accounts. In those States in which price maintenance contracts are in effect, it is

also specified that a direct buyer must order either an 18-dozen assortment or \$40 worth of goods in each shipment. The manufacturer's price list is the same in all States, but discounts and deals offered to wholesalers and to indirect buyers in the five States in which contracts have been issued are more liberal than in "non fair trade" States. However, while indirect buyers in "non fair trade" States do not generally receive as liberal discounts as those in "fair trade" States, the former are granted display allowances and more liberal free-deal terms than are the latter. Discounts to direct buyers are the same everywhere. It is not possible to show comparative mark-ups because adequate retail price data in the "non fair trade" States are not available.

Table 42 summarizes the terms granted by the manufacturer:

TABLE 42.—*Terms of sale for Cosmetic "C"*

	"Non fair trade" States	"Fair trade" States
Manufacturer's list price.....	\$4.65 per dozen.....	\$4.65 per dozen.
Discounts to wholesalers and jobbers.	15 percent trade, less 1 percent cash.	15 percent trade, less 10 percent trade, less 1 percent cash.
Discounts to retailers buying through wholesalers.	Not fixed by manufacturer—usually varies from 5 to 10 percent.	Orders under \$6—10 percent. Orders \$6 to \$12—12½ percent. Orders \$12 and over—15 percent.
Display allowance to retailers buying through wholesalers ¹ .	\$2 order—choice of 1 unit of 2 other products.	\$3 order—choice of 1 unit of 2 other products.
Discounts to direct account.....	5 percent discount from list, or free goods.	None.
	15 percent trade, less 1 percent cash; and free goods or an additional 10 percent from net.	15 percent trade, less 10 percent trade, less 1 percent cash.

¹ Offered only periodically, and items purchased must be in specified ratio to one another.

Summary for eight products.—Margins for the products described (with the exception of the last, for which data are inadequate) are summarized in table 43. It is evident that, despite differences in detail, practice is fairly consistent. Margins to wholesalers on small sales, which probably constitute the bulk of their business, average about 15 percent in all cases. Wholesalers' margins on large sales vary, falling into two groups. In the case of the two pharmaceuticals, and toiletry "A," they are substantially lower than on small sales, ranging from 6 to 8 percent. For the drug sundry, toiletry "C" and cosmetic "A," the wholesaler's mark-up is only slightly lower on large sales than on small, and for cosmetic "B" and toiletry "B" the mark-up is the same regardless of the size of the transaction. In general, therefore, a 15-percent margin for products of this kind may be considered the norm.⁵

Retail mark-ups also fall into a fairly well-defined pattern. Retailers, particularly independents, have usually regarded 33½ percent of the selling price as a satisfactory mark-up and have at times stated this position through their trade associations. This is the desired margin without any allowance for cash discounts, of which many small retailers are unable to take advantage. Including one or two percent for cash, the desired mark-up would range from about 34 to 36 percent.

The table shows that the mark-up to the small retailer, buying at maximum cost and selling at the full list price falls into precisely this

⁵ It is significant in this connection that manufacturers' discounts to wholesalers (exclusive of cash) are usually expressed as 15 percent directly or as 10 and 5 which is equivalent to 14½ percent.

range for six of the eight products, is slightly lower for toiletry "B," and is significantly lower only in the case of the drug sundry. Where wholesalers allow—or are permitted to allow—quantity discounts, retailers who can take advantage of these extra allowances can obtain mark-ups of about 40 percent by selling at full list.

TABLE 43.—*Wholesale and retail mark-ups for 8 nationally advertised products*

	Pharmaceutical A	Pharmaceutical B	Toiletry A	Toiletry B	Cosmetic A	Cosmetic B	Toiletry C	Drug Sundry
Margin to wholesalers:								
Buying at minimum, selling at maximum..	Percent 14.1	Percent 12.4	Percent 18.4	Percent 13.5	Percent 15.5	Percent 14.7	Percent 15.7	Percent 17.0
Buying at maximum, selling at minimum..	6.5	7.5	12.2	13.5	13.6	14.7	12.1	15.4
Margin to retailers buying through wholesalers:								
Selling at full retail list:								
Buying at minimum..	45.9	43.2	40.0	29.2	34.7	33.9	40.0	24.2
Buying at maximum..	34.7	36.7	35.4	29.2	34.7	33.9	34.0	22.9
Selling at minimum retail:								
Buying at minimum..	32.4	27.1	27.3	29.2	34.7	33.9	21.1	24.2
Buying at maximum..	18.3	18.8	21.7	29.2	34.7	33.9	13.2	22.9
Margin to retailers buying directly from manufacturer:								
Selling at full retail list:								
Buying at minimum..	46.7	47.3	44.4	38.8	37.3	37.3	44.3	28.8
Buying at maximum..	43.9	44.5	44.4	38.8	37.3	37.3	44.3	28.8
Selling at minimum retail:								
Buying at minimum..	33.4	32.5	32.6	38.8	37.3	37.3	26.7	28.8
Buying at maximum..	29.9	28.8	32.6	38.8	37.3	37.3	26.7	28.8

Source: Bureau of Labor Statistics.

Contractual minimum prices, on the other hand, when these are below list, allow substantially narrower margins to the indirect buying retailer. For those who can take advantage of full quantity discounts and deals, the mark-up averages about 25 percent; for those who buy at maximum cost, the range was from 13 to 23 percent.

Retailers buying direct from the manufacturer are generally able to buy more cheaply than those who buy through wholesalers. The full list price yields mark-ups ranging as high as 47 percent. However, it is probable that most direct buyers sell at or near the minimum price, when that is below the list price, and actual mark-ups are consequently somewhat narrower. For the eight products shown the range of mark-ups based upon the minimum price was from 27 to 39 percent, with an average of about 33 percent. In other words, the mark-up of the small retailer, buying in small quantities at maximum

cost and usually selling at or near the full list price, is about the same as that of the large direct buyer who typically resells at the minimum.

Margins allowed by a large drug manufacturer.—There is evidence that these conclusions are generally applicable to a fairly wide range of products. For example, a large drug manufacturer prescribes terms of sale to consumers and to retailers in detail and divides his line of merchandise into three groups. One of these three groups contains somewhat over one hundred different items, including primarily household remedies and toiletries. Most of these items are relatively "fast selling" and are often featured on a price basis. The retailer who purchases an assortment of \$10 or more of this manufacturer's products is entitled to a 10 percent quantity discount from the price charged retailers who buy in smaller quantities, while retailers who purchase \$25 or more on a single order obtain a 15 percent quantity discount. In addition a one percent cash discount is also offered. Consequently, the retailer who purchases in large quantities can obtain merchandise at about 15.9 percent below the cost to the retailer who buys in minimum quantities. Minimum prices have been set by contract for all this range of products and in practically all cases the minimum price is somewhat below the full list price.

The gross margins available to retailers for each product in this group have been computed under four conditions:

- (1) Purchases at maximum cost and resale at the minimum contract price.
- (2) Purchases at minimum cost and resale at the minimum price.
- (3) Purchases at maximum cost and resale at the full list price.
- (4) Purchases at minimum cost and resale at the full list price.

Table 44 indicates the number of items under which specified mark-ups can be obtained under each of these four conditions. It is evident that the gross margins for these items fall into much the same pattern as that observed for the more limited list of products which has been described above. The small retailer who buys in minimum quantities and resells at the full list price and the large retailer who purchases in large quantities and resells at the contractual minimum will typically obtain between 30 and 35 percent as his mark-up. (The range for all of the manufacturers' products in this group is considerably wider but these are the most common or "modal" margins.) On purchases at maximum cost and resale at the minimum price, the typical mark-up is considerably lower, ranging from 20 to 25 percent, and on purchases at minimum cost and resale at the full list price, the typical mark-up is between 40 and 45 percent.

The second group into which this manufacturer divides his products is composed largely of vitamin products. Quantity discounts are somewhat smaller and mark-ups materially more liberal. The maximum quantity discount for this group is only 10 percent instead of 15 percent. The mark-ups available to the retailer for 28 articles are summarized in table 45. On purchases at maximum cost and resale at the full list price and also on purchases at minimum cost and resale at the contractual minimum, the typical range is between 35 and 45 percent. The small retailer purchasing in minimum quantities will typically obtain between 30 and 35 percent as his mark-up even on sales at the contractual minimum. The large retailer taking advantage of full quantity and cash discounts and selling at the full list price can obtain as much as 45 to 50 percent mark-up on sales of most of the items in this group.

TABLE 44.—*Maximum and minimum retail mark-ups for 132 products sold by a large drug manufacturer—Group I*

Mark-ups (in percentages)	Number of items yielding specified mark-ups			
	Items sold at minimum resale price—		Items sold at full retail price—	
	To retailers purchasing at maximum cost	To retailers purchasing at minimum cost	To retailers purchasing at maximum cost	To retailers purchasing at minimum cost
10 to 14.9	7			
15 to 19.9	16			
20 to 24.9	69	4	2	
25 to 29.9	26	10	36	
30 to 34.9	9	56	67	1
35 to 39.9	2	48	13	10
40 to 44.9	3	9	7	84
45 to 49.9		2	5	24
50 to 54.9		2	2	6
55 to 59.9		1		4
Total	132	132	132	132

Source: Manufacturer's Price List.

TABLE 45.—*Maximum and minimum retail mark-ups for 28 products sold by a large drug manufacturer—Group II*

Mark-ups (in percentages)	Number of items yielding specified mark-ups			
	Items sold at minimum resale price—		Items sold at full retail price—	
	To retailers purchasing at maximum cost	To retailers purchasing at minimum cost	To retailers purchasing at maximum cost	To retailers purchasing at minimum cost
20 to 24.9	2			
25 to 29.9	5			
30 to 34.9	21	2	3	
35 to 39.9		15	10	1
40 to 44.9		11	13	7
45 to 49.9			2	18
50 to 54.9				2
Total	28	28	28	28

Source: Manufacturer's Price List.

The third group of products offered by this manufacturer comprises primarily standard pharmaceuticals and biologicals often sold on prescription. Price competition for items of this character is rarely an important factor. As a result, no minimum prices have been established by contract. In all cases the retailer receives a 40-percent discount from the full list price, plus an additional 1 percent for cash. The practice is to sell most products of this kind at the full list price, so that the retailer's mark-up will usually be about 40 percent on all sales.

Mark-ups for cosmetics.—Among the products discussed in the detailed analysis of terms of sale, above, were two brands of cosmetics. The mark-up on these items to retailers buying through wholesalers is between 34 and 35 percent in both cases. For both these items no quantity discounts were offered and the minimum price was established at the full list price, so that gross margins were uniform to all retailers who purchased through wholesalers.

These two articles appear to be generally representative of the situation with regard to most widely advertised cosmetics, particularly

for those in the higher-priced lines. This is indicated by table 46, which summarizes the mark-ups available under different conditions of sale and resale. (No allowance has been made for cash discounts, but these are never large.) For the products of a number of important manufacturers, 33 to 34 percent appears to be the standard mark-up under ordinary conditions. Quantity discounts are available for the products of some of these manufacturers but they are usually limited and rarely raise the mark-up above 40 percent. In a few cases, however, mark-ups are considerably lower, but these appear to form the exception rather than the rule.

TABLE 46.—*Maximum and minimum retail mark-ups allowed by 12 cosmetic manufacturers on their various price lines*

Mark-ups (in percentages)	Number of items yielding specified mark-ups ¹			
	Items sold at minimum resale price—		Items sold at full retail price—	
	To retailers purchasing at maximum cost	To retailers purchasing at minimum cost	To retailers purchasing at maximum cost	To retailers purchasing at minimum cost
10 to 14.9.....	1			
15 to 19.9.....	5	1		
20 to 24.9.....	5	3	10	
25 to 29.9.....	14	17	13	17
30 to 34.9.....	38	19	39	23
35 to 39.9.....		15	1	11
40 to 44.9.....	2	8	2	12
45 to 49.9.....				
50 to 54.9.....		2		2
Total.....	65	65	65	65

¹ The "minimum" retail and the "full list" retail price were identical for 52 of the 65 items.

Source: Wholesaler's Price list, September-October 1939.

Mark-ups in California.—Tables 47 and 48 are taken from a recent study of the effects of resale price maintenance in California.⁶ These indicate the percentage mark-ups for different kinds of drug products. Table 47 is for all kinds of products, both advertised and unadvertised, while table 48 is for well-known advertised drug products only. It is again evident that, despite considerable variations among different kinds of products, there is a marked tendency for retail margins to concentrate in the range between 30 and 35 percent. Mark-ups for well-known advertised products, however, are somewhat below the average for all products.

Summary.—The data which have been presented indicate that despite considerable variations in detail and for particular products, there is a substantial degree of uniformity of mark-up policy in the drug trade. Wholesalers usually obtain a gross margin slightly exceeding 15 percent on the sale of most transactions. In the case of some products, wholesalers' mark-ups are narrower on sales of large quantities than on sales of small quantities, but this is far from the universal rule. Moreover, it has been pointed out that the average small drug retailer usually buys on a hand-to-mouth basis, so that any quantity discounts are only applicable to the minority of transactions.

⁶ Price Control Under Fair Trade Legislation, by Ewald T. Grether, pp. 94-96.

For the drug retailer the typical gross margin seems to be between 30 and 35 percent of the selling price. The figure is probably somewhat below this range for popular fast-selling merchandise on which there is active price competition, and somewhat higher for slow-moving articles such as standard pharmaceuticals and biologicals. It seems probable, moreover, that the difference between the prices at which large and small retailers can purchase is reflected not so much in a corresponding difference in their gross margins as in their resale price policies. The small retailer pays more, but usually sells for more, with the result that his mark-up is probably much the same as that of his larger competitor.

TABLE 47.—*Retail margins¹ on products in the drug trade in California under the California fair-trade law, July 1936*

Classes of products	Number of items	Percent of minimum margins in percentage intervals							Aggregate minimum margins	Aggregate maximum margins
		0-10.9	11-20.9	21-30.9	31-40.9	41-50.9	51-60.9	61-70.9		
Ant, fly, and insect supplies.....	32		21.87	15.63	34.37	25.00	3.13		31.31	37.04
Antiseptics.....	61	4.92	18.03	39.35	19.67	18.03			27.60	33.66
Atomizers and vaporizers.....	29			24.14	68.96	6.90			33.38	39.32
Baby specialties.....	7		28.57	71.43					22.62	29.38
Cigars.....	43		37.21	58.14	4.65				24.40	27.60
Cod liver oil.....	120		10.83	67.50	16.67	10.83	4.17		29.25	31.89
Contraceptives.....	74		1.35	27.03	31.08	24.32	10.81	5.41	40.59	48.01
Cosmetics.....	359	2.51	18.10	31.75	38.44	7.80	.56	.84	32.74	36.11
Cough and cold preparations.....	53	1.89	13.21	39.62	26.42	15.09	3.77		29.14	36.54
Dentifrices.....	45	22.22	35.56	22.22	6.67	8.89	4.44		21.60	26.41
Deodorants.....	20	5.00	30.00	45.00	20.00				24.26	29.56
Dog and bird preparations.....	8			12.50	87.50				35.54	41.95
Effervescent salts.....	30	3.33	33.33	33.34	16.67	13.33			26.40	30.52
Eye preparations.....	15	6.67		33.33	26.67	33.33			32.94	38.99
Films.....	21	14.28	14.29	71.43					20.74	29.51
Foods and tonics.....	76	6.58	14.47	55.26	11.84	10.53	1.32		30.63	34.13
Foot remedies and preparations.....	43		2.32	25.58	20.93	48.84	2.33		38.15	44.02
Hair preparations.....	99	6.06	46.47	30.30	14.14	3.03			23.28	28.76
Hospital supplies.....	62		12.90	6.45	80.65				34.29	39.16
Household remedies.....	37		5.40	18.92	40.54	27.03	5.41	2.70	38.06	42.61
Household supplies.....	27	7.41	18.52	22.22	48.15		3.70		28.56	34.41
Laxatives.....	91	1.10	8.79	42.86	18.68	20.88	6.59	1.10	35.83	39.38
Liniments.....	25	4.00	20.00	52.00	12.00	8.00	4.00		26.96	35.39
Mineral oils.....	30	6.67	23.33	26.67	30.00	13.33			27.73	27.31
Mineral waters.....	3			66.67	33.33				31.64	38.43
Nose and throat preparations.....	50		2.00	40.00	38.00	16.00	4.00		30.88	37.83
Ointments.....	55	1.82	10.91	40.00	29.09	18.18			30.46	36.65
Patents.....	23		8.69	82.61	8.70				24.97	33.62
Pharmaceuticals.....	64	1.56	14.06	42.19	31.25	9.38	1.56		31.51	33.93
Pills and tablets.....	151		10.60	41.72	30.46	15.23		1.99	31.07	36.82
Poison oak and insect lotions.....	11			9.09	27.27	63.64			40.48	45.54
Razors and blades.....	47	6.38	10.64	29.79	53.19				29.76	30.63
Rubber goods.....	20			5.00	50.00	40.00	5.00		42.14	47.83
Salts.....	10			30.00	50.00	10.00	10.00		39.95	42.25
Shaving supplies.....	88	3.41	52.27	26.14	3.41	10.23	2.27	2.27	29.12	33.06
Soaps.....	24		25.00	29.17	20.83	20.83	4.17		37.18	40.22
Sundries.....	46			6.52	45.65	19.57	28.26		38.30	42.28
Suppositories.....	10		10.00	40.00	30.00	20.00			31.47	38.93
Tooth and gum treatments.....	24			54.17	20.83	16.67	4.17	4.16	31.16	37.91
Tooth brushes.....	16		25.00	37.50	18.75	18.75			28.63	38.27
Vaseline (petroleum jellies).....	26		7.69	65.38	23.08	3.85			27.23	29.96
Watches and clocks.....	37			70.27	27.03	2.70			32.48	35.53
Total.....	2,112	2.56	16.48	36.50	28.55	12.64	2.56	.71	31.73	35.84

¹ Margins are computed as percentages of contractual prices.

² Total percentages are aggregates, not averages of the class percentages.

TABLE 48.—*Minimum retail margins¹ on selected well known advertised drug products in California under the California fair-trade law, July 1936*

Classes of products	Number of items	Percent of items in percentage intervals						Class averages of selected items	Total class averages (see table VII)
		0-10.9	11-20.9	21-30.9	31-40.9	41-50.9	51-60.9		
Antiseptics.....	12	-----	50.00	41.67	8.33	-----	-----	20.57	27.60
Cod-liver oil.....	7	-----	28.58	28.58	14.28	14.28	14.28	31.36	29.25
Cosmetics.....	28	7.14	42.86	17.86	25.00	7.14	-----	25.21	32.74
Cough and cold preparations.....	5	-----	-----	80.00	20.00	-----	-----	26.58	29.14
Dentifrices.....	14	28.58	50.00	21.42	-----	-----	-----	15.63	21.60
Deodorants.....	4	-----	50.00	50.00	-----	-----	-----	20.82	24.26
Effervescent salts.....	3	-----	33.33	66.67	-----	-----	-----	25.00	26.40
Eye preparations.....	1	-----	-----	100.00	-----	-----	-----	23.50	32.94
Foods, tonics, etc.....	4	-----	25.00	75.00	-----	-----	-----	24.25	30.53
Foot remedies.....	1	-----	-----	-----	100.00	-----	-----	33.00	38.15
Hair preparations.....	8	12.50	37.50	50.00	-----	-----	-----	20.29	23.28
Household remedies.....	2	-----	-----	100.00	-----	-----	-----	23.95	38.06
Laxatives.....	4	-----	25.00	75.00	-----	-----	-----	26.52	35.83
Liniments.....	1	-----	100.00	-----	-----	-----	-----	19.70	26.67
Mineral oils.....	3	33.33	-----	33.33	-----	33.34	-----	25.87	27.73
Nasal preparations.....	2	-----	-----	50.00	50.00	-----	-----	30.00	30.88
Ointments.....	4	25.00	-----	75.00	-----	-----	-----	20.97	30.46
Patents.....	2	-----	-----	100.00	-----	-----	-----	25.50	24.97
Pharmaceuticals.....	2	-----	-----	50.00	50.00	-----	-----	28.15	31.16
Pills, tablets, and capsules.....	3	-----	-----	66.67	33.33	-----	-----	27.73	31.07
Shaving supplies.....	17	-----	82.34	17.66	-----	-----	-----	17.95	29.12
Total ²	127	7.05	39.41	38.62	11.01	3.13	.78	22.75	30.96

¹ Margins are computed as percentages of contractual prices.² Total percentages are aggregates.

Source: Table XIII, Price control under fair-trade legislation, by Grether, appendix B, pp. 494-495.

None of these figures take account of any special privileges granted to very large buyers such as the national chain stores, but data regarding such special concessions are very difficult to obtain, especially since the Robinson-Patman Act became law. Where such special concessions are available, margins may be correspondingly wider, especially for commodities for which resale price maintenance contracts have been issued.

It has also been impossible to obtain any information regarding margins for private brands. The very marked differences which have been demonstrated between the cost of widely advertised products to distributors and the cost of producing similar items from their chemical ingredients may make it possible for the owners of private brands to resell them to the consumer at levels considerably below those for the correspondingly nationally advertised merchandise, and yet to recover a very substantial margin on the transaction.

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